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An Examination of Whether Grit, Belonging and Institutional Compassion Contribute to Emerging Adult Goal Pursuits and Reduce Pandemic-Related Stress

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AN EXAMINATION OF WHETHER
GRIT, BELONGING AND INSTITUTIONAL COMPASSION
CONTRIBUTE TO EMERGING ADULT GOAL PURSUITS
AND REDUCE PANDEMIC-RELATED STRESS

by

Cynthia A.M. Schmahl

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Partial Fulfillment of the
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May 2021

ABSTRACT

AN EXAMINATION OF WHETHER GRIT, BELONGING AND INSTITUTIONAL COMPASSION CONTRIBUTE TO EMERGING ADULT GOAL PURSUITS AND REDUCE PANDEMIC-RELATED STRESS

by

Cynthia A. M. Schmahl

The University of Wisconsin-Milwaukee, May 2021
Under the Supervision of Professor Jacqueline Nguyen, Ph.D.

This dissertation examines the merits of grit and belonging for emerging adults' collegiate goal pursuits and the influence of institutional compassion amid COVID-19 challenges and stress. Participants were traditional full-time, undergraduate students ages 18-24, recruited from a national sample using Qualtrics, an online survey tool ($N = 258$; 60% women; 47.31% White, 18.46% Black/African American, 17.31% Asian, 10.77% Hispanic/Latino/a/x). Participants completed a survey including two measures developed for this study—institutional compassion and goal progress—and measures of grit, belonging, and pandemic-related stress.

Grit and sense of belonging predicted goal progress. Grit subscales had differentiated results—adaptability to situations and perseverance of effort predicted goal progress; consistency of interest did not. Independently, sense of belonging was a stronger predictor of goal progress than grit. Participants with weaker sense of belonging exhibited more pandemic-related stress; participants with higher grit scores had lower pandemic-related stress overall. Institutional compassion strongly associated with grit, sense of belonging, and stress; in particular, as institutional compassion increased, sense of belonging increased, and pandemic-related stress decreased. Grit, belonging, and institutional compassion are important to students' perceptions of goal progress and stress.

Keywords: belonging, grit, goal pursuits, institutional compassion, pandemic stress

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DEDICATION

Dedicated to

Ruth...

Marcia...

Cynthia...

Vashti...

and other lineages of women whose faith in Jesus,
passion, perseverance, and adaptability contribute to extraordinary accomplishments.

With joy and humble appreciation, I honor a host of strong women who have walked this doctoral journey with me. First, my deep love and admiration to Marcia who called me her “Waterloo” for she saw in my infant determination a passion and perseverance that she recognized as beyond her ability to harness, but not beyond God’s. My example of embracing challenges and opportunities to learn, Marcia inspires me daily to be everything the LORD created me to be.

Second, Vashti, my “Beautiful Messenger from God” whose encouragement and example of fearless pursuit of her dreams across the pond remind me of the courage we possess to walk by faith and not by sight. I treasure Vashti and I cherish her delight to see me succeed despite life’s challenges.

Third, Rebecca my sweet sister in Christ and best friend whose encouragement (not only in long evening hours of travel for classes in Milwaukee but also through countless hours of research, analyses, and writing) powered me through many challenges. Rebecca energizes me with her faith in Christ and unwavering confidence in me.

Fourth, Dr. Jacqueline Nguyen, who vitalized my scholarly integrity and identity.

Fifth, Marj, whose faith and fervent prayers sustained me through droughts and doubts. Marj’s relentless petitions to the LORD on my behalf exemplify the power of prayer.

Finally, Margaret, Ruth, Lou Eva, and Maggie whose prayers, ingenuity, and determination in my formative years exemplified key qualities of strong women. None of these precious women are here today, but each would be rejoicing with me and the other strong women for this accomplishment we have achieved together.

Each day I thank the LORD for giving me the strength of these women to pursue and embrace the enriching challenges of doctoral studies.

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CHAPTER 1 - Introduction

Dynamic changes during emerging adulthood propel individuals toward acquiring and embracing greater ownership for choosing, pursuing, and completing personally defined goals in both cognitive and social domains. For some, the college or university context provides the necessary foundation in the journey towards personal and professional success (Arnett, 2000; Furstenberg, 2010; Schwartz, Côté, & Arnett, 2005); however, the pandemic caused by COVID-19 wrought upheaval to college campuses disrupting emerging adults' academic pursuits, limiting social venues, and placing unprecedented challenges upon institutional commitments that support these social and academic pathways.

This author is particularly interested in probing the questions: Why do some individuals continue to persevere through challenges—lulls in progress, delays in goal completion, or failures in academic coursework—and succeed in their goal pursuits, yet others do not? What personal traits/characteristics or, in a broader sense, contexts contribute significantly to academic success? These questions point to the individual's sense of direction and drive to pursue that direction as well as contexts that either support or diminish sense of direction and drive. These questions probe the “whys” for what humans do, in particular, what contributes to personal achievement and organizational effectiveness.

Self-determination theory (SDT) posits explanations for why humans do what they do (Deci & Ryan, 2000) and comprises the theoretical underpinnings for the current research. Some criticize this theory suggesting that it posits explanations of human behavior from a predominantly White perspective that is insensitive to the challenges of minoritized populations. Many of these challenges occur within institutional structures, systems, and social contexts, originally designed using predominantly White reference points. Social contexts can either

support or thwart goal pursuits—Deci and Ryan directly address this very essential point in their discussions on intrinsic motivation, external regulation, internalization, autonomy, culture, and well-being (2000). Self-determination theory is a tool and like any other tool, some may misuse it and cause harm; however, this does not constitute the ineffectiveness of the tool, but rather the ineptness and/or negligence of the practitioner.

Self-determination theory posits three fundamental psychological needs—competence, relatedness, and autonomy necessary for growth, integrity, and well-being (Deci & Ryan, 2000). Human efforts to satisfy these needs spans throughout life and are secondary to fundamental physical needs of food, clothing, and shelter. It is of particular interest to analyze emerging adult goal pursuits through the lens of self-determination theory; this developmental life stage represents a critical time during which individuals gain greater ownership for choosing, pursuing, and completing their goals. To this end, emerging adults satisfy deeply meaningful needs for effectiveness, connection, and coherence, thus contributing to their overall success and well-being (Arnett, 2000; Deci & Ryan, 2000; Hove, 2017).

Self-determination theory also posits the regulatory processes that sustain goal pursuits, i.e., intrinsic and extrinsic motivation. Humans will pursue activities they find interesting (intrinsic motivation) or important (internalized extrinsic motivation) when their fundamental psychological needs for autonomy, relatedness and competency are met (Hope, Milyavskaya, Holding, & Koestner, 2016; Luyckx, Duriez, Green, & Negru-Subtirica, 2016; Nowell, 2017; Werner, Milyavskaya, Foxen-Craft, & Koestner, 2016). In SDT, the set point is “growth-oriented activity” where humans are “naturally inclined to act on their inner and outer environments, engage activities that interest them, and move toward personal and interpersonal coherence” (Deci & Ryan, 2000, p. 230).

SDT suggests that satisfying the fundamental psychological needs for autonomy, relatedness, and competency forms the foundation for growth, integrity, and well-being—the bases for bridging the gap between individual differences in goal motivations and social contexts in which goals are pursued. Intrinsic motivation entails vested pursuit of goals that sustain interest and promote growth. Extrinsic motivation stems from social contexts in which individuals pursue their goals amid circumstances that challenge the extent to which intrinsically motivated behaviors are self-determined or externally controlled (Deci & Ryan, 2000; Hope, et al., 2016; Luyckx, et al., 2016; Nowell, 2017; Werner et al., 2016).

Intrinsic motivation can be negatively affected by external rewards as these rewards shift the locus of control from internal to external. Intrinsic motivation benefits from autonomy in which interests and goals are pursued freely without implications of consequences or rewards. Likewise, competency is essential to intrinsic motivation. As individuals receive positive feedback in their goal pursuits, they perceive these affirmations as indicative of their competency, whereas negative feedback diminishes the sense of competency and undermines intrinsic motivation (Zhoc, King, Law, & McInerney, 2019). Feedback stems from relationships, thus suggesting the importance of relatedness for intrinsic motivation. Individuals are more likely to succeed in “contexts characterized by a sense of secure relatedness” (Deci & Ryan, 2000, p. 235).

Extrinsic motivation can benefit individual goal pursuits if external contexts can be internalized, i.e., personally approved and self-regulated. To do so, the individual cannot only recognize the importance or value others place on a particular trait or behavior, but also needs to harmonize those external contexts with their personal values and identity. When coherence between external contexts and internal values and identity cannot be harmonized, people feel

controlled, thus thwarting their autonomy and relatedness. Consequently, goal pursuits differ in the extent to which individuals fully feel volition and choice—without which they feel controlled (Zhoc, et al., 2017). Even though relatedness within supportive social groups facilitates the internalization of group mores, it is essential for the individual to maintain autonomy, i.e., to be free from pressure to approve external contexts and allowed to choose for oneself (Deci & Ryan, 2000).

SDT suggests that greater autonomy sustains not only goal pursuits but is essential to sustain the quality of human behavior as well as health and well-being, i.e., better physical and mental health, persistent goal pursuits, critical thinking, social interactions, and stress management. An autonomous person aligns behavior with personal interests and values while assimilating into larger social contexts. “Autonomy involves being volitional, acting from one’s integrated sense of self, and endorsing one’s [own] actions. It does not entail being separate from, not relying upon, or being independent of others” (Deci & Ryan, 2000; p. 242).

It is important to note that cultures and communities influence values and goals, thus, necessitating the contextualizing of autonomy, relatedness, and competency within cultural norms. Cultural contexts differ in beliefs and practices that support the satisfaction of autonomy, relatedness, and competency. Thus, the cultural (and cultural subgroup, e.g., family or club) goals must be integrated to fully satisfy the needs for autonomy, relatedness, and competency (Deci & Ryan, 2000; Zhoc et al., 2019). If these are not integrated, psychological growth, integrity, and well-being may be thwarted. Thus, any behaviors enacted without being fully integrated into self are not considered “self”-determined.

Deci & Ryan’s emphasis on this point speaks to the issues raised regarding minoritized populations. Deci & Ryan suggest that for human behavior to be self-determined, people must

be allowed to “engage volitionally in activities, whether socially prompted, emotionally energized, or simply pursued out of interest. Such integration is most likely to occur in social contexts that allow people to satisfy basic psychological needs” (Deci & Ryan, 2000, p. 248). Therefore, we must attend to the deficits in social contexts and institutional structures that prevent the satisfaction of these needs instead of assuming the deficiencies lie within the person. Deci and Ryan deeply explore the effects of thwarting the satisfaction of needs asserting, “that in situations in which need satisfaction cannot be achieved, people’s inherent tendency toward activity and organization will lead to protective responses” (Deci & Ryan, 2000, p. 249). Consequently, the intrinsic motivations will likewise be affected and be substituted by external motivational forces that “will vary in strength as a function of the circumstances in which they were acquired” (Deci & Ryan, 2000, p. 250). Environments that block the satisfaction of these needs have negative associations with goal pursuits and well-being (Deci & Ryan, 2000; Hope, et al., 2016; Luyckx, et al., 2016; Nowell, 2017; Werner, et al., 2016; Zhoc, et al., 2019), and have positive associations with eating disorders and self-defeating behaviors (Williams, Cox, Hedberg, & Deci, 2000).

SDT posits the operationalization of needs fulfillment across domains, e.g., academic and social. Fulfilling these needs have adaptive advantages: 1) to face challenges that contribute to skill mastery to function in physical and social contexts; 2) to seek belongingness, security, and intimacy with others; and 3) to integrate self-determined and internalized external goals to regulate own behavior. Furthermore, fulfilling these needs “guide people toward more competent, vital, and socially integrated forms of behavior” (Deci & Ryan, 2000, p. 252).

While humans seek to satisfy these needs throughout life, it is important to note that satisfying these needs is an essential task during emerging adulthood as individuals establish

themselves away from former support systems (Arnett, 2000; Furstenberg, 2010). In Spring 2020, collegiate students faced abrupt changes to their university experiences that potentially altered their perceptions of goal pursuits. It is of particular interest to examine grit and belonging in the context of pandemic-related stress and institutional response to COVID-19. In particular, the fulfillment of the SDT fundamental psychological need for competence is represented by college student goal pursuits, and the two constructs that may be useful to address how emerging adults successfully pursue their goals, grit and belonging, represent autonomy and relatedness, respectively.

Contributors to Goal Pursuits

Grit. Grit, defined as consistency of interest and perseverance of effort, has been associated with positive educational, professional, and personal outcomes (e.g., college, military, well-being; Datu, Yuen, & Chen, 2017; Duckworth, et al., 2007). Proponents suggest that grit entails strenuous effort over many years even when faced with delays, failure, or adversity. The idea that grit propels individuals through delays in progress, failures, and adversity suggests its usefulness in the midst of COVID-19 uncertainty and, for some, pandemic-related stress. However, critics of grit suggest the construct overemphasizes personal agency and diminishes the effect of institutional and social barriers that can hinder the success of emerging adults—this has been an expressed concern for racial/ethnic minority students and others who have been historically marginalized in institutions of higher education (Golden, 2017; Kundu, 2017). Similarly, SDT asserts that social contexts support needs satisfaction to the extent that the context supports the individual’s cultural narrative and aligns with needs fulfillment (e.g., autonomy in individualistic culture) (Deci & Ryan, 2000; Huéscar Hernández, Moreno-Murcia,

Cid, Monteiro, & Rodrigues, 2020). Therefore, it is imperative to assess the extent to which university students feel supported in their passion and perseverance toward goal pursuits.

Belonging. It is important, therefore, to attend to the role that belonging—one’s sense of “fitting in” and being wholly accepted (Baumeister & Leary, 1995)—plays in academic success and well-being. SDT asserts that seeking relatedness contributes to feelings of connectedness and care; “the need for belongingness or relatedness provides a motivational basis for internalization” (Deci & Ryan, 2000, p. 253) that harmonizes external regulations with personal values, feelings, and skills. Many colleges and universities aim to foster a sense of belonging with the awareness that it appears to contribute to both grit (i.e., perseverance of effort; Lan, 2019) and academic goal pursuits (i.e., continued enrollment; Morrow & Ackermann, 2012). Under normal circumstances, some emerging adults experience stress while forging new social connections in the transition from family to university settings. However, disruptions to social and institutional opportunities during initial reactions to COVID-19 pandemic potentially increased levels of stress for emerging adults seeking to establish meaningful connections amid academic pursuits.

Institutional Compassion. The efforts of colleges and universities to streamline COVID-19 responses had the potential of contributing to or reducing stress. It is important to assess the extent to which students perceived that their universities were enacting COVID-19 responses with care, compassion, and attention to their health and well-being. SDT emphasizes that “conditions that facilitate versus forestall need satisfaction can affect outcomes such as persistence, the quality of experience, creativity, and well-being” (Deci & Ryan, 2000, p. 258). It is possible that institutional attempts to minimize disruption during COVID-19 lessened the potential effects of pandemic-related stress. Moreover, institutional compassion may influence

grit and sense of belonging, thus helping students to resist the effects of pandemic-related stress upon their goal pursuits.

Supporting student success has been a long-term focus of institutions of higher education. Over thirty years ago, Tinto provided rich analyses of the circumstances precipitating student attrition. Though rooted in research during the 1980's, his work is the most dominant in the field of student retention and provides valuable insight. However, retention in many cases has become the focus, which misses Tinto's expressed concern that it "is not merely that individuals stay, but that they grow *socially and intellectually* as a result of staying. Education, not retention, is their essential goal" (Tinto, 1987, p. 157, *emphasis added*).

Institutions emphasizing retention programs cannot substitute those programs for meaningful, interpersonal relationships (Tinto, 1987). Tinto acknowledged that while retention occupies much of the focus for institutional interventions, the goal must be to cultivate both social and intellectual growth (Tinto, 1987). Likewise, SDT asserts that satisfying the needs for autonomy, relatedness, and competency are not differentiated by the strength of the need expressed by the individual, but rather, by the interaction of those needs with the "social context that supports versus thwarts them" (Deci & Ryan, 2000, p. 261). In spring 2020, institutions of higher education quickly implemented changes to social and academic venues in response to COVID-19. The social context of compassion or lack thereof with which these changes were communicated could have supported or diminished students' grit, sense of belonging, and goal pursuits.

Significance of the Study

Examining the relationships among grit, belonging, institutional compassion, and goal pursuits amid COVID-19 pandemic-related stress is particularly important for emerging adult

university students. Prior to the pandemic, of the 64% of students who pursued post-secondary education only 29% graduated nationwide (Condition of College & Career Readiness, 2017; NCHEMS Information Center for Higher Education Policymaking and Analysis, 2015). The COVID-19 pandemic wrought widespread disruption to student goal pursuits unlike any other circumstances in which grit or belonging were previously studied. If in calmer times these factors independently contributed to successful academic outcomes and well-being, how much more important is it to know how students' grit and sense of belonging help them to resist the effects of pandemic-related stress? It is also important to know how institutional compassion amid myriad changes during spring 2020 influenced these factors.

This dissertation builds upon previous foundations and sharpens the focus on goal pursuits—emphasizing social connections and volition for achieving goals. SDT asserts that pursuing goals that satisfy the fundamental needs for autonomy, relatedness, and competency contribute to well-being. Fulfilling these innate fundamental psychological needs are not goals in and of themselves. Rather, the fulfillment occurs as a dynamic by-product of pursuing goals that fulfill these needs and contribute to self-organization, competence, relatedness, and adaptability (Huéscar Hernández, et al., 2020; Werner, et al., 2016; Zhoc, et al., 2019). Grit, a personal characteristic comprised of perseverance, passion, and adaptability (Datu, 2017), manifests autonomy in goal pursuits. Sense of belonging, a feeling of connectedness, and care within social contexts that support goal pursuits, manifests relatedness. Goal progress, as assessed via shorter-term goals (e.g., improving GPA), contributes to competency. These three, complemented within supportive and compassionate institutional contexts, contribute to effective interpersonal and physical vitality toward longer-term goal pursuits.

Satisfying these needs may have been interrupted or otherwise influenced by COVID-19.

Thus, the COVID-19 context of this study further builds upon previous research as follows: 1) it analyzes grit in the context of adversity, challenge, and setbacks (previously asserted but not tested amid such widespread disruption); 2) it explores the influence of institutional compassion on grit, belonging, and goals; and 3) it explores whether these variables help students resist the effects of COVID-19 pandemic-related stress.

Summary

Emerging adulthood is characterized, in part, by instability as emerging adults face myriad changes (Arnett, 2000). For some, the pandemic due to COVID-19 challenged grit and sense of belonging that support their goal pursuits. However, we must also attend to the role of institutional compassion, which may have supported or thwarted emerging adult grit, sense of belonging, and goal pursuits. The relationships among grit, sense of belonging, institutional compassion, and stress may be salient for all emerging adult collegiate goal pursuits—regardless of the pandemic context. However, this context provides an opportunity to test these constructs, which have been posited as useful amid challenging circumstances.

CHAPTER 2 - Literature Review

It is imperative to analyze how grit, belonging, and institutional compassion contribute to supporting emerging adult goal pursuits and to decreasing pandemic-related stress. The ways grit, belonging, and institutional compassion impact goal pursuits and pandemic-related stress will be examined using the theoretical framework of Self-Determination Theory (SDT; Deci & Ryan, 2000). SDT outlines the lifespan effort of humans to satisfy the fundamental psychological needs of autonomy, relatedness, and competence. Seeking competency via goal pursuits contributes to developing effective interpersonal and physical vitality. Seeking relatedness via sense of belonging contributes to feelings of connectedness and care. Seeking autonomy via grit contributes to integrity, self-determined action, and well-being. Satisfying these needs is particularly important during emerging adulthood as it forms the foundations for future goal pursuits. However, the changing and challenging conditions of COVID-19 may have interrupted or otherwise influenced these pursuits.

Indeed, the pandemic provided an opportunity to examine how grit and belonging support emerging adult academic outcomes (i.e., goal pursuits) amid uncertain and challenging circumstances. This is particularly important to the study of grit. Whereas proponents of grit posit its usefulness in overcoming challenges or adversity (e.g., Duckworth, et al., 2007; Eskreis-Winkler, et al., 2014), the body of research on grit under circumstances of wide-spread challenge or acute adversity are limited. Instead, scholarship has relied on participant interpretations of their own experiences with challenges or adversity. The pandemic introduced a shared experience of widespread challenge or adversity in which to understand whether grit truly can help students continue in their goal pursuits.

Likewise, student belonging has not been disrupted to extent that it was during COVID-

19, when institutions of higher education rapidly responded to the pandemic by moving instruction online, canceling classes, and shuttering campus housing. Emerging adults in university settings had to quickly adjust to the changes and satisfy belonging via altered social venues. It is important to understand the extent to which students' sense of belonging contributes to their ability to withstand pandemic-related disruption and stress.

Finally, the pandemic presents an opportunity to explore the role of institutional compassion in supporting student goal pursuits. As colleges and universities enacted COVID-19 responses, how did students perceive communications from their respective institutions? What helped emerging adults to maintain goal pursuits? Did pandemic-related stress influence students' grit, sense of belonging, or perceptions of progress toward achieving their goals? Hence, it is important to consider the influence of the institution as we examine the contributions of grit and belonging to supporting emerging adult goal pursuits and to decreasing pandemic-related stress.

Emerging Adulthood and Self-Determination Theory

Emerging adulthood is a time of dynamic explorations of life directions in the areas of vocations, relationships, and worldviews. This life stage encompasses five distinctive features: feeling in between adolescence and adulthood, exploring identity, sensing broad possibilities for the future, focusing on self, and experiencing instability (Arnett, 2000). For some, this includes attending university where opportunities abound for greater autonomy in choosing and pursuing personally identified goals (Schwartz, Côté, & Arnett, 2005). Emerging adults embrace greater ownership in satisfying their fundamental psychological needs—i.e., autonomy, relatedness, and competence. SDT suggests that the extent to which individuals satisfy these needs directly affects their goal pursuits (Deci & Ryan, 2000). Emerging adulthood forms the foundation for

future goal pursuits as it comprises the most volitional years of life (Arnett, 2000).

Throughout the lifespan, people are innately predisposed to interact with the environment such that they pursue personal interests and satisfaction rather than simply responding to environmental stimuli or physiological needs. Before pursuing psychological needs, individuals seek to satisfy basic needs—i.e., food, clothing, shelter, companionship—not satisfying these needs contributes to stress that disables people from pursuing what they find interesting or important (Deci & Ryan, 2000). The adverse conditions of COVID-19 hindered basic need satisfaction and interrupted goal pursuits for many emerging adults. The sudden changes in the collegiate environment thrust emerging adult university students into uncertainty, chaos, and stress. External circumstances, over which individuals may feel no sense of control, potentially interfere with motivation and contribute to stress (Arnett, 2000; Deci & Ryan, 2000; Thompson, 2014). Stress negatively influences an individual's cognitive resources (Glass & Singer, 1972) and psychosocial functioning (Dohrenwend & Dohrenwend, 1981).

SDT differentiates between the specific goals, (e.g., good grades, graduation, good job) and the factors supporting the attainment of those goals (e.g., autonomy, relatedness, competency, social contexts) (Deci & Ryan, 2000). Autonomy supports self-regulation of behaviors in harmony with feelings and skills (Huéscar Hernández, et al., 2020; Hope et al., 2016). “Autonomy conveys adaptive advantages because it is the very basis of effective behavioral regulation across domains and developmental stages” (Deci & Ryan, 2000, p. 254). Autonomy is expressed via grit as emerging adults exhibit passion, perseverance, and adaptability toward short-term goals—e.g., managing time, selecting classes, deciding major—that support long-term goals—e.g., vocational and relational commitments (Arnett, 2000, Deci & Ryan, 2000). Relatedness supports human tendencies toward connectedness with others—a

unique trait of social organisms. Relatedness is experienced via sense of belonging as emerging adult university students engage in frequent and meaningful connections in contexts where they feel valued and accepted. This is particularly important as they navigate unfamiliar social networks away from former community and family support systems. Competency supports human appreciation for learning (Hope, et al., 2016). This appreciation for learning contributes to sustained efforts toward domain-specific and adaptive skills necessary for growth.

Competency is experienced via goal pursuits as emerging adult university students complete many short-term goals leading to their post-secondary degrees and future careers. The pandemic disrupted university academic and social venues and may have interrupted specific collegiate goals; however, compassionate and supportive institutional responses amid these abrupt changes may have softened the impact. Thus, it is important to examine emerging adults' grit, sense of belonging, and perceptions of goal pursuits amid these challenging circumstances and uncertainty that exceed typical experiences of emerging adulthood, e.g., instability and/or feeling in between adolescence and adulthood.

Grit

Grit has been identified as useful for successful goal outcomes (Duckworth, et al., 2007). As a construct situated within the satisfaction of SDT need for autonomy, grit contributes to emerging adult goal setting and pursuit (Huéscar Hernández, et al., 2020; Hwang, Lim & Ha, 2017; Wolters & Hussein, 2015). Emerging adult grit might also contribute the successful transition from home to unfamiliar institutional structures (O'Neal, Espino, Goldthrite, Morin, Weston, Hernandez, & Fuhrmann, 2016). Assimilating into the university context can be especially difficult due to both academic and social challenges where emerging adults experience significant changes in support networks. The increased academic rigor and unfamiliar

institutional hierarchies pose many challenges for emerging adult students. Proponents of grit suggest that “gritty” individuals overcome challenges in pursuit of their goals. Navigating institutional structures may present appreciable challenges to some students under normal circumstances. However, COVID-19 created unprecedented challenge and/or adversity that former grit research proponent but did not test within such widespread difficulty.

Definition of Grit. The construct of grit is comprised of two lower order traits—consistency of interest and perseverance of effort (Duckworth, et al., 2007). Consistency of interest comprises both the initial spark as well as the enduring focus on the goal; perseverance of effort encompasses the capacity to work diligently (i.e., stamina). Grit spans lengthy stretches of time (i.e., years) regardless of intermediate obstacles of failures, delays, or adversity (Duckworth, et al., 2007). Datu (2017) expands this definition to include a third lower order trait—adaptability to situations which comprises “the individual’s ability to adjust effectively to changing circumstances in life” (p. 199).

Measures of Grit. Duckworth, et al., (2007) developed and validated the original 12-item Grit Scale, which later Duckworth and Quinn (2009) revised creating the Short Grit Scale (Grit-S). Their analyses support the conceptualization of grit comprised of two lower order traits—consistency of interest and perseverance of effort—noting that the composite Grit-S score is a better predictor of success than either subscale alone (Duckworth & Quinn, 2009). In addition to the seminal research on grit, two variations for measuring grit emerged—The Grit Scale for Children and Adults (Sturman & Zappala-Piemme, 2017) and a Triarchic Model of Grit Scale (TMGS: Datu, Yuen, & Chen, 2017).

The Grit Scale for Children and Adults introduced greater versatility of the grit scale among adults and children. Sturman and Zappala (2017) created the measure with a lower

reading ability level ranging from 4th to 5th grade as well as a modified definition of grit: “to sustain a focused effort to achieve success in a task, regardless of the challenges that present themselves, and the ability to overcome setbacks” (p. 2). However, the predominantly white, low economic sample used for the development and validation of this scale limits its use among a more diverse sample.

The Triarchic Model of Grit Scale (TMGS) was developed in response to previous research in collectivist cultures. In addition to consistency of interest and perseverance of effort, Datu, Yuen, & Chen (2017) posit adaptability to situations as an additional lower order grit trait. Adaptability contributes the necessary dimension of one’s ability to accommodate change with flexibility while maintaining effort and interest during challenges, and adaptability to situations associates with higher levels of academic self-efficacy and vocational/skill discovery and development (Datu, et al. 2017). Though seminal research of grit presents flexibility (i.e., adaptability) within the original descriptions of grit, the TMGS explicitly identifies adaptability to situations as a unique lower order trait. Based on 2019 Integrated Postsecondary Education Data System (IPEDS) data, collectivist cultures represent approximately 56% of non-White university students; thus, the TMGS provides a more culturally sensitive measure for assessing grit within university contexts.

In the analyses of relationships among grit, belonging, and goal pursuits, it is particularly beneficial that the TMGS not only measures perseverance of effort and consistency of interest, but also adaptability to situations. Adaptability is especially important for emerging adults in university settings. Not only do they experience expanded opportunities to choose and pursue goals, but they also face unfamiliar institutional structures away from former family and community support systems. Consequently, emerging adults must exercise adaptability to

navigate the academic and social structures in university settings. TMGS inclusion of adaptability to situations adds to the measure an essential component that seminal grit research cursorily identified as flexibility (Duckworth, et al., 2007; Jin & Kim, 2017).

Belonging

Belonging contributes to successful student transitions into university life (e.g., Wang, Cullen, Yao, & Li, 2013) and satisfies the fundamental psychological need for relatedness (Deci & Ryan, 2000). Emerging adults face many changes in both academic and social expectations during this time of transition from home to university. To be successful in making this transition, it is important for emerging adult university students to satisfy the need for belonging. When they fail to meet this need and do not feel part of the intellectual and social life of the institution, they are less likely to continue their education until graduation (Freeman, 2007; Thomas, 2000; Tinto, 1987). Institutions of higher education aim to foster emerging adults' belonging in many ways, but the social and institutional supports students had come to rely upon were wholly disrupted in spring 2020 when many colleges/universities shuttered dorms and canceled or moved courses into virtual environments.

Definition of Belonging. Belonging is defined in two ways: 1) a personal trait characterized by the individual desire to develop and cultivate interpersonal relationships with frequent and rewarding interactions (Baumeister & Leary, 1995) and 2) the state of integrating into larger social structures characterized by fit and valued involvement (Deci & Ryan, 2000; Hagerty & Patusky, 1995; Tinto, 1987). As a personal trait, belonging can be satisfied via a minimum number of quality interpersonal relationships comprised of care and concern. This trait manifests itself among almost all humans, exists cross-culturally, and represents a fundamental motivation engendering intentional efforts to satisfy this desire (Baumeister &

Leary, 1995). As a state, belonging can be satisfied by assimilation into a larger social structure where the individual feels accepted and valued for personal contributions to the group (Baumeister & Leary, 1995; Deci & Ryan, 1995; Tinto, 1987). Group membership affirms the individual's assessment of his or her own fit in the group and if that individual's membership is challenged, he or she feels distanced or marginalized from the group (Lee & Robbins, 1995). SDT is premised upon humans being oriented toward growth and coherence between self and social contexts; thus, experiencing a greater sense of belonging contributes to emerging adult goal pursuits and well-being (Deci & Ryan, 2000).

University settings give emerging adults greater opportunities to develop social networks. Some students form social networks via athletic participation, living on campus, joining sororities/fraternities, or working on campus. These networks, in turn, influence emerging adult social connections and intellectual development (Morrow & Ackerman, 2012; Wilson & Gore, 2013). However, this may be difficult for some, e.g., students with marginalized group status or first-generation university students, because transitioning into unfamiliar White opportunity structures requires social and cultural capital (Kundu, 2017). Though students exhibit the desire to belong, establishing the state of belonging may be particularly challenging. Therefore, it is prudent to consider group differences among emerging adult experiences of belonging.

Belonging supports emerging adult efforts to establish new, meaningful, and fulfilling interpersonal relationships (Furstenberg, 2010) as they decrease relational dependency on family and former community relationships. Their foundational relationships with parents influence collegiate peer, faculty, and institutional belonging, e.g., those with high quality parental interactions tend to demonstrate greater social connectedness (Holt, 2014; Wilson & Gore, 2013). Additionally, satisfying the need to belong mitigates a student's responses to stressful

circumstances, improves cognitive processes, and influences academic success (Lee & Robbins, 1995; Morrow & Ackermann, 2012; Wilson & Gore, 2013; Zumbrunn, McKim, Buhs, & Hawley, 2014). Sense of belonging protects students from the effects of stress including pandemic-related stress (Procentese, Capone, Caso, Donizzetti, & Gatti, 2020). This is important because students who experience belonging (state) are more likely to continue their studies (Tinto, 1987; Morrow & Ackermann, 2012; Wilson & Gore, 2013).

Involvement within organizational structures (e.g., study groups, departments, fraternities, sororities, teams) facilitates interpersonal relationships and a sense of belonging within the institution. Students' belonging is influenced both by the feeling of acceptance from peers as well as from professors. The interactions with professors generate greater feelings of belonging when characterized by genuine care and concern beyond the classroom (Freeman, 2007; Tinto, 1987). These interactions enhance feelings of belonging especially as they draw students closer to the center of university life (Tinto, 1987).

Measures of Belonging. Measures of belonging encompass both the trait of belonging and the state of belonging. The trait of belonging encompasses the individual's desire to and effort toward becoming part of a group. The state of belonging represents the individual's actual/perceived experience of being part of a group. As emerging adult university students seek a sense of belonging, it is meaningful to note the distinctions between the trait and the state of belonging. For this dissertation, the focus is on the experience (i.e., state) of belonging within the university.

The most commonly used measures for the state of belonging include the Sense of Belonging Instrument-Psychological Experience (Hagerty & Patusky, 1995), the Psychological Sense of School Membership scale (Goodenow, 1993b), and the Sense of Belonging Scale

(Hoffman, Richmond, Morrow, & Salomone, 2002-2003). The Sense of Belonging Instrument-Psychological Experience measures the experience of fit into a larger social structure and feelings of valued involvement. For example, the statement “If I died tomorrow, very few people would come to my funeral” measures feelings of valued involvement (reverse coded) or “I wonder if there is any place on earth where I really fit in” measures the experience of fit (reverse coded). This scale measures sense of belonging in general contexts and inadequately captures the specific sense of belonging within a post-secondary institutional setting. Many of the statements on this scale would be vague for the emerging adult university student; therefore, it would not give a clear assessment of belonging that is particularly meaningful for individuals in this life stage.

The Psychological Sense of School Membership scale (Goodenow, 1993b) was developed for use in secondary schools and measures the student’s subjective sense of fit and valued involvement. Freeman, Anderman & Jensen (2007) adapted the scale for use within post-secondary educational settings, to measure both the classroom sense of belonging (e.g., “I feel like a real part of this class”) and the university sense of belonging (e.g., “Sometimes I feel as if I don’t belong at this university” reverse coded). This scale not only includes the overall feeling of fit and valued involvement in the university, but also support by faculty (e.g., “Most professors at this university are interested in me”) and peer acceptance (e.g., “I can really be myself at this university”) (Freeman, Anderman, & Jensen, 2007). Though the adaptation of the original scale improved its use within university settings, the scale misses some nuances of the emerging adult university student transition from family dependence to independence as they establish new social networks, e.g., outside of class, with others in the university setting.

The Sense of Belonging Scale by Hoffman, Richmond, Morrow, and Salomone (2002-2003) was developed specifically for use with first year (i.e., emerging adult) college students. This scale incorporates insight from previous literature on retention, institutional policies, and intervention strategies for measuring students' sense of acceptance and value within the university setting. Unlike the adapted Psychological Sense of School Membership scale, the Sense of Belonging scale assesses acceptance and value beyond classroom interactions with peers and faculty to include personal and social interactions outside of academic concerns. The Sense of Belonging scale includes five factors of belonging: perceived faculty support/comfort, empathetic faculty understanding, perceived peer support, perceived classroom comfort, and perceived isolation (Hoffman, et al., 2002-2003). Attention to these five factors is particularly salient for emerging adult university students who find themselves seeking connection beyond the classroom. As emerging adult university students experience faculty, peer, and classroom belonging, they feel more connectedness and care (Deci & Ryan, 2000) and are more likely to complete their post-secondary education goals (Tinto, 1987; Morrow & Ackermann, 2012; Wilson & Gore, 2013).

Institutional Compassion

As emerging adults' transition from the supportive environments of home and community, the need for institutional compassion in the academic context increases. The need for support and compassion, formerly met by family, friends, and school employees in the home community, presents unique opportunities for post-secondary institutions. Many universities provide social venues creating structure and easing emerging adult transitions to alleviate feelings of instability that decrease self-esteem and increase depressive symptoms (Luyckx, De Witte, & Gossens, 2011). However, COVID-19 tested institutional compassion unlike any other

circumstance emerging adults experience in university settings. Instability increased as colleges and universities quickly enacted measures to minimize the spread of the virus by closing dormitories and canceling classes or moving instruction to online platforms. Thus, the media was riddled with anecdotal accounts from students who had poor experiences with their institutions who may have provided few accommodations or support pertaining to housing, grading, and emergency remote learning. However, most students reported their institutions did a good or excellent job responding to the pandemic (69% as reported in McKenzie, 2020). Institutional policies and practices influence students' goal pursuits (Pascarella, et al., 2016; Tinto, 1987)—pursuits that benefit from grit and sense of belonging. They also demonstrate efforts contributing to contexts that either support or diminish student efforts toward successful goal pursuits that influence vitality and well-being (Deci & Ryan, 2000; Hove, 2017). During pandemic-related uncertainty, students needed to feel institutional compassion 1) to bolster their trust in those making decisions (Lupoli, Zhang, Yin, & Oveis, 2020) and 2) to support goal pursuits involving both the goals and the motivation for pursuing those goals (Deci & Ryan, 2000).

Definition of Institutional Compassion. Compassion—defined as “being moved by another’s suffering and wanting to help” (Lazarus, 1991, p. 289)—extends beyond acknowledging the suffering to desiring to and actively intervening. Compassion encompasses pity, concern, empathy, understanding, and meaningful action—action that intervenes to alleviate the suffering, pain, isolation, and misfortune. Straus, Taylor, Gu, Kuyken, Baer, Jones, & Cavanagh propose five elements of compassion—recognizing suffering, understanding universality of suffering, feeling empathy for the one suffering, tolerating uncomfortable feelings, and acting to relieve suffering (2016). This definition encompasses cognitive, affective,

and behavioral processes with respect to compassion for others' suffering. Compassion is essential, especially in institutional settings where the risk is greater that individuals assume someone else is addressing the need. For emerging adults in university settings, unless the institution collectively pursues compassion, students who are suffering will not feel that others care about them and that they belong.

Institutional compassion includes three key interrelated elements: noticing, feeling, and responding (Kanov, et al., 2004). Noticing is the first crucial step without which compassion cannot be activated. Noticing requires openness and attentiveness to others. Feeling is the second crucial element engaging the emotions and suffering with the one who is suffering. Responding is the third crucial element taking action toward easing the suffering.

Measures of Institutional Compassion. The compassion scales developed in previous research focus primarily on individual assessment of personally perceived compassion (e.g., Compassionate Love Scale which measures one's own altruistic love for close others) or compassion received in healthcare environments (e.g., Schwartz Center Compassionate Care Scale). Though at the time of writing, an instrument specifically designed for use in post-secondary institutions could not be found, review of existing measures influenced the development of the institutional compassion scale used in this study.

Measures that focus on receiving compassion more closely approximate the conceptualization of institutional compassion. One such measure, Compassionate Care Assessment Tool (CCAT; Burnell & Agan, 2013) measures levels of compassion received by patients in hospital settings. Patients rate the care given by nurses in two contexts—the level of importance the patient places on the item and the extent to which they received such care from the nurse. The measure focuses on four domains: the ability of nurses to establish meaningful

connections (e.g., providing outside connection), to meet patient expectations (e.g., checking frequently), to display care (e.g., considering personal needs), to exhibit capable practitioner qualities (e.g., displaying confidence). However, some questions (e.g., timely treatments or controlling pain) depend on variables outside the nurses' control (i.e., managerial, or organizational level factors).

Another measure, the Schwartz Center Compassionate Care Scale (SCCCS; Lown, Muncer, & Chadwick, 2015) measures patient perceptions of care received from physicians. Patients complete items using a ten-point scale from 1 (*not at all successful*) to 10 (*very successful*). Items tapped into the recognition of suffering (e.g., “listen attentively to you”), emotional desire to alleviate suffering (e.g., “express sensitivity, caring and compassion for your situation”), and action to alleviate suffering (e.g., “Always involve you in decisions about your treatment”). Assessing compassion received, demonstrated in both healthcare-based measures, provided useful examples for the development of the scale used in the present study to measure the compassion students perceived from their colleges or universities.

Goal Pursuits

Goals propel individuals toward the successful achievement of desired expectations (Benita, Shane, Elgali, & Roth, 2017; Deci & Ryan, 2000). SDT focuses “on the ‘what’ and the ‘why’ of goal selection and pursuit” (Deci & Ryan, 2000, p. 258) where the outcomes of goal pursuits are not universal, but the relationship between contributing factors and driving factors is (Deci & Ryan, 2000; Hope, et al., 2016; Luyckx, et al., 2016; Nowell, 2017; Werner, et al., 2016). Long-term goals and the steps to attain them align with the organismic and life span qualities of SDT where humans actively pursue growth and life satisfaction within a larger social context (Deci & Ryan, 2000; Hove, 2017; Zhoc, et al., 2019). These lifelong pursuits encompass

times of ease as well as difficulty. COVID-19 presented difficulty, uncertainty, and heightened stress that challenged post-secondary goal pursuits of many emerging adults and potentially skewed their perceptions of progress.

Definition of Goal Pursuits. Goal pursuit involves both the goal and the motivation for pursuing the goal (Deci & Ryan, 2000). Emerging adults choose and pursue various pathways to advance their efforts toward life-long goals. Some pursue post-secondary education to attain training and competence for careers aligned with their long-term goals. The culmination of educational efforts, i.e., graduation, represents a longer-term goal that requires successful completion of shorter-term goals satisfying degree requirements (e.g., prerequisites, passing grades, and academic integrity). Family support significantly contributes to the initial commitment to the long-term goal of graduation and to the enduring pursuit of the necessary intermediate goals (Strom & Savage, 2014), but emerging adults also need meaningful connections in the university to support their goals (e.g., positive peer/faculty interactions, collegiate school clubs, and financial support via loans, grants, or scholarships) (Morrow & Ackerman, 2012). Goal pursuit encompasses perceived progress in short-term goals that align with and support longer-term academic and career goals.

Measures of Goal Pursuits. Higher Education research provides insight for goal outcomes using a variety of predictor and outcome variables—race, sex, financial support, test scores, high school GPA, residency, and first term post-secondary GPA (Pascarella, Mayhew, Rockenbach, Bowman, Seifert, Wolniak, & Terenzini, 2016; Murtaugh, Burns, & Schuster, 1999; Tinto, 1987). The most salient indicators of successful graduation include student engagement, faculty/staff interactions, study habits, choice of major, GPA in specific general education courses, GPA in courses aligned with major, multi-cultural interactions, first-generation student

status, and parents' educational level (Millea, Wills, Elder, & Molina, 2018; Porter, Rumann, & Pontius, 2011; Tobolowsky, Cox, & Vivechkanand, 2017; Travers, Morisano, & Locke, 2015). However, these measures encompass external assessments of goal pursuits instead of students' perceptions of progress toward personally identified goals.

Students experience academic success via outcomes such as academic achievement, skill attainment, competency, and satisfaction (York, Gibson, & Rankin, 2015). Grades are associated with educational attainment even when controlling for other characteristics such as high school preparation, first-generation student status, ethnicity, and year in college (Mayhew, et al., 2016). This strong relationship between grades and educational goal progress may be influenced by the consequences for not maintaining good grades, e.g., academic dismissal. Furthermore, students struggling with low grades may choose to stop out, transfer, or drop out. However, tangible rewards for goal pursuits (or consequences for the lack thereof) frequently diminish autonomy and intrinsic motivation (Deci & Ryan, 2000). Therefore, to assess goal progress, we attend to emerging adult perceptions and look beyond common external academic assessments (e.g., retention, credits completed, choosing/declaring a major, and GPA) often used for determining progress. Looking at student perceptions of progress toward goals more accurately captures their personal satisfaction in goal pursuit which influences success (York, Gibson, & Rankin, 2015; Sheldon & Cooper, 2008). Emerging adult evaluation of personal goal efforts serves as a salient and robust measure for goal pursuits, i.e., *goal progress* (Gaudrear, Carraro, & Miranda, 2012; Koestner, Otis, Powers, Pelletier & Gagnon, 2008; Powers, Koestner, & Zuroff, 2007; Sheldon & Cooper, 2008).

Pandemic-Related Stress

Emerging adults face myriad changes and new experiences contributing to their growth.

In much calmer circumstances than COVID-19, those changes (e.g., moving away from home, looking for a job) may exacerbate common stressors related to explorations of love, work, and worldviews (Arnett, 2000; Furstenberg, 2010; Nichols & Islas, 2016), such as, academic pressures, financial concerns, and social strain (Skowron, Wester, & Azen, 2004). Stress has been associated with negative outcomes for college students, including poor academic outcomes (Saklofske, Austin, Matoras, Beaton, & Osborne, 2010), anxiety (Towbes & Cohen, 1996) and psychological distress (e.g., COVID-19; Ye, Wu, Im, Liu, Wang, & Yang, 2020). Moreover, when people cannot satisfy fundamental psychological needs posited in SDT, they experience diminished motivation and well-being (Deci & Ryan, 2000).

Definition of Pandemic-Related Stress. Stress has many sources—e.g., ongoing circumstances, anticipation of future activities, reflections of past events, reactions to specific situations (Ross, Niebling & Heckert, 1999). Perceived threat contributes to how individuals adapt to or cope with their assessment of the likelihood that the threat will negatively affect them (Thompson, 2014). Some stress may be good as it motivates in beneficial ways, e.g., higher levels of perceived efficacy with higher levels of stress result in proactive behaviors (Kanadiya & Sallar, 2011). However, excessive stress may lead to poor academic outcomes due to diminished concentration, study, sleep, and diet (Ruthig, Haynes, Stupnisky, & Perry, 2008). COVID-19 may have elevated stress for emerging adult students who faced uncertainty as colleges and universities responded to the spread of the virus by closing dormitories, implementing virtual classes, or cancelling classes altogether. These measures may have contributed to stress due to the sudden disruptions of academic and social venues. The impact of institutional COVID-19 protocols and soaring concerns for widespread and personal implications of the virus constitute pandemic-related stress.

Measures of Stress. Measures of stress developed for use among college students include: the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983), the Undergraduate Stress Questionnaire (USQ; Crandall, Preisler, & Aussprung, 1992), the Academic Stress Scale (Kohn & Frazer, 1986), and the Stress Appraisal Measure (SAM; Peacock & Wong, 1990). Other stress scales found assessed on-going stress and psychological distress in college students (e.g., the College Chronic Life Stress Survey; Towbes & Cohen, 1995) or focused on stress among patients in healthcare situations (the Perceived Stress Scale; Lehman, Burns, Gagen, & Mohr, 2012). The College Chronic Life Stress Survey uses time-series data as well as peer evaluations and Perceived Stress Scale uses questions specific to health events, therefore, neither of these was deemed useful for this study.

The Perceived Stress Scale is a 14-item measure assessing students' appraisal of stress with life in general (Cohen, Kamarck, & Mermelstein, 1983). The scale measures the extent to which respondents' perceived life as unpredictable, uncontrollable, and overloaded. The scale includes seven positively worded questions (e.g., "In the last month, how often have you dealt successfully with irritating life hassles?") and seven negatively worded questions ("In the last month, how often have you felt nervous and 'stressed'?") which were ranked from 0 (*never*) to 4 (*very often*). Many of the questions in this scale would be too broad to capture emerging adult college students' stress resulting from sudden changes due to COVID-19.

The Undergraduate Stress Questionnaire was specifically designed for use among college students to measure life event stress (Crandall, Preisler, & Aussprung, 1992). The measure includes 83 items—51 items (61%) non-school related (e.g., "victim of a crime"), 21 items (25%) school related (e.g., "talked with a professor"), and 11 items (13%) in between (e.g., "couldn't find a parking space"). Respondents used a four-point scale from 1 (*none*) to 4 (*a lot*)

to assess how stressful the event would be if they encountered the event. The questionnaire captures a wide spectrum of potential stressors but was too lengthy to include with other measures.

The Academic Stress Scale is a 35-item scale consisting of three factors—physical stressor, psychological stressor, and psychosocial stressor (Kohn & Frazer, 1986). The physical stressor subscale includes nine items assessing stress from the physical environment (e.g., “poor classroom lighting” or “crowded classrooms”). The psychological stressor subscale includes eleven items assessing stress from perception (e.g., fast-paced lectures” or “nonnative language lectures”). The psychosocial subscale includes fifteen items assess stress from demand (e.g., “excessive homework” or “studying for examinations”). This measure focuses on academics and does not include other stressors encountered by emerging adult college students.

The Stress Appraisal Measure is a 28-item scale consists of seven subscales—threat, challenge, centrality, controllable-by-self, controllable-by-others, uncontrollable, and stressfulness (Peacock & Wong, 1990). The four threat subscale items assess perceptions of potential harm or loss (e.g., “Is this going to have a negative impact on me?”). The four challenge subscale items assess anticipation of growth or change (e.g., “To what extent can I become a stronger person because of this problem?”). The four centrality subscale items measure perceptions of the event contributing to one’s well-being (e.g., “How much will I be affected by the outcome of this situation?”). The remaining twelve items measure the controllability of the situation—controllable-by-self (e.g., “Do I have what it takes to do well in this situation?”), controllable-by others (e.g., “Is there someone or some agency I can turn to for help if I need it?”), and uncontrollable-by-anyone (e.g., “Is this a totally hopeless situation?”). This multidimensional scale captures both perceived stressfulness and perceived control.

Furthermore, the Stress Appraisal Measure provides greater versatility in assessing emerging adult college student stress within the university and broader community context and is deemed most useful for this study.

The Present Study

SDT is premised upon human tendencies toward growth and well-being. The needs for autonomy, relatedness, and competency intersect within social contexts that either support or thwart the satisfaction of these needs, thus enhancing or diminishing development, performance, and well-being. Supportive social contexts 1) contribute to intrinsic motivation, 2) facilitate healthy internalization of extrinsic motivation, and 3) strengthen goal setting and pursuit. Autonomy (internal integration) and harmony (social integration) require supportive social contexts. Recognizing autonomy, relatedness, and competency as innate psychological needs allows for “predictions of social conditions that promote high quality development and performance and of the person factors that, at any given time, contribute to high-quality development and performance” (Deci & Ryan, 2000, p. 262). Institutional compassion amid COVID-19 represents social conditions with grit and belonging as person factors in the current the examination of their influences on goal pursuits and pandemic-related stress.

Previous research suggests that individuals with grit and belonging have more positive perceptions of goal pursuits than those who do not (e.g., Akos & Krechmar, 2017; Morrow & Ackermann, 2012). The pandemic due to COVID-19 disrupted the university experience for many emerging adults. Therefore, it is particularly important to analyze the usefulness of grit and belonging in helping emerging adults resist the effects of pandemic-related stress. Furthermore, it is of interest to explore the relationships among grit, belonging, institutional compassion, goal progress, and pandemic-related stress.

These variables and their relationship are especially important for emerging adults facing uncertainties and challenges due to COVID-19. Seminal grit research suggests that gritty individuals pursue long-term goals despite difficulties, adversity, challenges, and setbacks—these, as experienced during COVID-19, have not been widely evident in previous grit research. Furthermore, belonging represents an imperative developmental task for emerging adults that also contributes positively to successful outcomes. Both grit and belonging contribute positively to growth and well-being. However, emerging adults faced increased instability and stress due to disruptions of institutional and social supports during COVID-19. The institutional compassion measure developed for this study assesses the influence of institutional personnel in communicating COVID-related protocols. Analyzing emerging adult grit and sense of belonging for their contributions to goal progress and their effects on pandemic-related stress and exploring institutional compassion in the midst of pandemic circumstances provide rich analyses and recommendations for future research.

Research Question and Hypotheses

The usefulness of grit and belonging in the context of challenges and difficulties and institutional compassion in supporting emerging adult students during pandemic times prompt the following questions and hypotheses about the influence of these factors on emerging adult goal progress and pandemic-related stress:

Research Question 1. Do grit and sense of belonging decrease the effect of pandemic-related stress?

Hypothesis 1. Higher grit is associated with lower pandemic related stress and more positive perceptions of goal progress. Null Hypothesis: There is no difference between participants higher in grit and participants lower in grit with respect to pandemic-related stress or

perceptions of goal progress.

Hypothesis 2. Stronger sense of belonging is associated with lower pandemic-related stress and more positive perceptions of goal progress. Null Hypothesis: There is no difference between participants with stronger sense of belonging and participants with weaker sense of belonging with respect to pandemic-related stress or perceptions of goal progress.

Research Question 2. What is the relationship between institutional compassion, sense of belonging, and pandemic-related stress?

Hypothesis 3. Higher institutional compassion is associated with stronger sense of belonging. Null Hypothesis: Institutional compassion is not associated with sense of belonging.

Hypothesis 4. Higher institutional compassion is associated with lower pandemic-related stress. Null Hypothesis: Institutional compassion is not associated with pandemic-related stress.

Hypothesis 5. Institutional compassion moderates the relationship between sense of belonging and perceptions of goal progress. Null Hypothesis: Institutional compassion does not moderate the relationship between sense of belonging and perceptions of goal progress.

CHAPTER 3 - Method

Research Design

This dissertation is a quantitative study using a cross-sectional research design with correlational and multiple regression analyses to investigate the research questions and hypotheses. Traditional emerging adult college students (i.e., ages 18-24, full-time students with no dependents) in the United States of America completed a one-time survey online.

The study was approved by the University of Wisconsin-Milwaukee Institutional Review Board (IRB #20.337).

Procedure

Recruitment. Participants were recruited from a national sample using an online survey tool, Qualtrics. Qualtrics is an online panel aggregator of many established consumer panels generated from a variety of sources, such as targeted email lists, customer loyalty programs, and member referrals. Members of these established panels had their identity verified via third-party measures and opted to participate in survey research.

Potential participants were offered an incentive to complete the survey (estimated value \$5). Qualtrics determined the type of incentive specific to the panel from which participants were sought (e.g., participants from retail loyalty programs may have been offered in-store credits). Potential participants were informed of the value and type of incentive prior to consenting.

Potential participants received an invitation to participate in this research via email or a prompt within a related website (e.g., retail loyalty webpage). The invitation described the incentive and the estimated time to complete the survey (approximately 15 minutes). A hyperlink redirected participants to the study description and online consent form. Four

screening questions verified that participants met the inclusion criteria: ages 18-24, full-time student, work less than 30 hours per week, and unmarried with no children. Individuals who met the criteria were directed to the online, one-time survey. Those who did not meet these criteria based on their answers to the screening questions were directed to the end of survey response thanking them for their interest in this research study.

Participants in the United States of America were chosen to minimize confounding variables resulting from differences between the American educational system and educational systems abroad. Additionally, varying national responses to COVID-19 posed another potential confounding variable corroborating the decision to sample from American college students. Excluded were college students with dependents, students for whom English was not their primary language, and those working more than 30 hours per week because these challenges were likely to exponentially impact the effects of the pandemic and pandemic-related stress beyond that experienced by traditional college students.

Participants

Participants were traditional full-time, undergraduate students age 18-24 ($N = 258$; 60% women; 47.3 % White, 18.5% Black/African American, 17.3% Asian, 10.8% Hispanic/Latino/a/x): 25% First year, 28.8% Second year, 26.5% Third year, 19.6% Fourth+ year; 56.9% living on-campus, 43.1% living off-campus; 18.8% parents high school degree or below, 24.2% parents two-year degree or some college (no degree), 32.3% parents four-year college degree, 24.6% parents degree beyond a four-year degree (e.g., Master's, PhD, MD, JD).

Measures

Sociodemographic information collected using survey items and was used in some analyses to explore group differences. The Appendix shows demographic questions as well as

the following measures.

Grit. The Triarchic Model of Grit Scale ($\alpha = .76$) (TMGS; Datu, Yuen, & Chen, 2017) was used to measure grit. This scale adds the subscale “adaptability” to the original Grit-S Scale which was designed for use among high achievers in several domains (e.g., National Spelling Bee contestants, West Point Military cadets; Duckworth & Quinn, 2009). The significant changes emerging adult students face in university settings and the diversity of cultures prompted the selection of the TMGS which assessed three domains: Adaptability to Situations, Perseverance of Effort, and Consistency of Interest. These subscales used a Likert-type scale of 1 to 5 (1 = *not at all like me* and 5 = *very much like me*) higher scores represent more grit (Datu, et al., 2017).

The *Adaptability to Situations* subscale (4 items, $\alpha=.75$; e.g., “Changes in life motivate me to work harder.”) assessed the degree to which participants exercise flexibility in pursuing their goals. Higher scores indicate greater adaptability to situations.

The *Perseverance of Effort* subscale (4 items, $\alpha = .70$; e.g., “I finish whatever I begin.”) assessed the degree to which participants sustain goal pursuits through hardships. Higher scores represent more strongly sustained goal pursuit regardless of hardship.

The *Consistency of Interest* subscale (4 items, $\alpha = .79$; e.g., “I have difficulty maintaining my focus on projects that take more than a few months to complete.”) assessed the degree to which participants keep their original goals. These items were reverse scored; higher scores indicate greater commitment to originally identified goals.

Belonging. Belonging was measured using the Sense of Belonging Scale (SB; Hoffman, et al., 2002-2003). The 26-item SB scale ($\alpha = .92$) assessed five domains: Perceived Peer Support, Perceived Faculty Support/Comfort, Perceived Classroom Comfort, Perceived Isolation, and Empathetic Faculty Understanding. All items were rated on a scale of 1 to 5 (1 = *completely*

true and 5 = completely untrue). Higher scores represent a greater perceived sense of belonging.

The *Perceived Peer Support* subscale (eight items, $\alpha = .88$; e.g., “If I miss class, I know students who I could get the notes from”) measures the individual’s academic and social support from peers.

The *Perceived Faculty Support/Comfort* subscale (six items, $\alpha = .86$; e.g., “If I had a reason, I would feel comfortable seeking help from a faculty member outside of class time [i.e., during office hours, etc.]”) measures the individual’s sense of comfort with and support from faculty.

The *Perceived Classroom Comfort* subscale (four items $\alpha = .88$; e.g., “I feel comfortable volunteering ideas or opinions in class”) measures the individual’s sense of classroom belonging.

The *Perceived Isolation* subscale (four items, $\alpha = .80$; e.g., “I rarely talk to other students in my classes” [reverse scored]) measures the individual’s sense of isolation from others.

The *Empathetic Faculty Understanding* subscale (four items, $\alpha = .66$; e.g., “I feel that a faculty member would be sympathetic if I was upset”) measures the individual’s sense of faculty to be both humane and compassionate.

Institutional Compassion. Drawing from qualitative research on institutional compassion (Araújo, Simpson, Marujo, & Lopes, 2019), the Institutional Compassion Scale (ICS, $\alpha = .72$; Appendix B) was developed to measure student perceptions of the responses of their college/university to the pandemic. The scale consists of three factors: Institutional Support, Institutional Resources, and Goal Continuity.

The *Institutional Support* subscale ($\alpha = .79$) assessed the support students received from campus personnel (4 items; “Given the response of you college to COVID-19/coronavirus pandemic, please rate how much care for you as a human being do you feel from [campus

personnel, e.g., faculty/instructors]”) and perceptions of support from administration in regard to campus policies (3 items; “Given the response of your college to COVID-19/coronavirus pandemic, please rate how much support you feel in relation to the following: [e.g., grading policies]”). Items were rated on a Likert type scale of 1 to 5 (1 = *Not at all* to 5 = *Extremely*); higher scores indicate more perceived support.

The *Institutional Resources* subscale (8 items; $\alpha = .88$) assessed how access to institutional resources may have diminished student challenges, (e.g., “Given the response of your college to COVID-19/coronavirus pandemic, please rate how much challenge have you personally experienced with each of the following: [e.g., housing accommodations, access to technology]). Items were rated on a Likert type scale of 1 to 5 (1 = *Not at all* to 5 = *Extremely*) and reverse-scored; higher scores indicate more institutional compassion in providing access to resources that reduce challenges.

The *Goal Continuity* subscale (4 items, $\alpha = .69$) assessed how institutional response influenced perceptions of continuation of goals (e.g., “Given the response of your college to COVID-19/coronavirus pandemic, please rate the likelihood that you will do the following: [e.g., “Enroll 20/21 Academic Year, Find a Job Related to Degree]”). Items were rated on a Likert type scale of 1 to 4 (1 = *Definitely not* to 4 = *Definitely will*); higher scores indicate greater influence of institutional response on continuing goal pursuits.

Goal Progress. The Goal Progress Scale ($\alpha = .80$; 6 items) modified items from Sheldon & Cooper’s (2008) measure of student perception of progress toward goal attainment.

Participants were asked to identify their most important short-term academic goal and most important long-term academic/career goal, and then asked three parallel questions to assess their progress in each goal (e.g., “To what extent would you say that you achieved or accomplished

this goal”). Responses were rated on a 5-point scale (1 = *Not at all*, 5 = *A great deal/completely*); high scores represent greater perceived progress toward attainment of goals.

Stress Appraisal Measure. The Stress Appraisal Measure assessed perceived stress resulting from significant life events or perceived external threat (28 items, $\alpha = .77$; Peacock & Wong, 1990). To assess pandemic-related stress, the stem was modified to ask, “Please respond according to how you feel COVID-19/coronavirus pandemic affects you right NOW.” Items (e.g., “This a totally hopeless situation”; “This situation creates tension in me”) were rated on a 5-point Likert-type scale (1 = *Not at all* and 5 = *Extremely*) and higher mean scores indicate greater pandemic stress.

Analytic Plan

A set of preliminary analyses was conducted: skew, kurtosis, and plots to assess normality and identify outliers; factor analyses to determine factor structure, reliability, validity of new measures; tests of linear regression assumptions—linearity, independence, homoscedasticity, and normality. Descriptive statistics and reliabilities are presented in Table 4.4; inter-relationships among the study variables are presented in Table 4.5. Exploratory factor analysis was used to determine the factor structure for the two new measures created for this study: Institutional Compassion and Goal Progress. ANOVAs were run to explore group differences for which to control in the main analyses.

Regression analyses were used to test the hypotheses as follows:

Hypothesis 1. Higher grit is associated with lower pandemic related stress and more positive perceptions of goal progress. Hierarchical regression controlling for gender was used.

Hypothesis 2. Stronger sense of belonging is associated with lower pandemic-related stress and more positive perceptions of goal progress. Hierarchical regression controlling for

gender and housing status was used.

Hypothesis 3. Higher institutional compassion is associated with stronger sense of belonging. Hierarchical regression controlling for housing, race/ethnicity, and parental level of education was used.

Hypothesis 4. Higher institutional compassion is associated with lower pandemic-related stress. Hierarchical regression controlling for gender, race/ethnicity, and parental level of education was used.

Hypothesis 5. Institutional compassion moderates the relationship between sense of belonging and perceptions of goal progress. Hierarchical regression testing effect of institutional compassion-support on the relationship between sense of belonging and perception of goal progress while controlling for housing and year in college was performed.

CHAPTER 4 - Results

IBM SPSS Statistics 27 was used for analyses and all test statistics are evaluated at the $p \leq .05$ level.

Preliminary Analyses

Upon receiving the raw data from Qualtrics, the data were reviewed to verify all satisfied inclusion criteria (i.e., ages 18-24, full-time students with no dependents). Participants who did not complete the survey (i.e., missing responses to survey questions) were not included in the sample. Of the 282 completed surveys collected, 24 were eliminated during data control processes, which eliminated straight-line responses, nonsense answers (e.g., “lliownosknn”) on open-ended questions, and contraindications between screening questionnaires and quality check questions. All data were then examined for inconsistencies and miscodings; items were then re-labeled/re-coded for the purpose of analysis. To determine if any data were missing or had been miscoded, descriptive statistics and frequency analyses were conducted. The final sample was $N=258$.

The underlying assumptions of homoscedasticity, linearity, and normality for the multiple regression analysis were first tested before running the proposed hierarchical regression models. Initial inspection of skew, kurtosis, and plots revealed three common outliers on multiple measures. However, further investigation did not reveal errors due to data entry/measurement or sampling problems/unusual conditions. Furthermore, none of the statistics for skew or kurtosis exceeded recommended values suggesting substantial departure from normality, i.e., absolute skew > 2.1 , absolute kurtosis > 7.1 (West, Finch, & Curran, 1995). Though retaining outliers reduces power, it was decided not to remove the outliers as the inspection suggests they occur due to natural variation. Proceeding with examination of assumptions, a relatively random and

fairly equal display of residuals over the range of predicted values in the scatter plot of the residuals against predicted scores indicated homoscedasticity of errors, for each model. Review of the scatterplots of the standardized residuals on the dependent variable, Goal Progress, suggested that linearity is a reasonable assumption for each model. The assumption of normality was tested through examining the distribution of the standardized residuals. The histogram showed a relatively normal distribution of residuals, which suggests that normality is reasonable for each model.

The two scales developed for this dissertation, Institutional Compassion Scale and Goal Progress Scale were analyzed to determine their factor structures.

Psychometric Testing

Institutional Compassion Scale. The Institutional Compassion Scale (19 items) was developed to measure perceived compassion from institutional representatives in the areas of support (7-items), resources (8-items), and goal continuity (4-items). The scale development used similar 5-point Likert-type scales for the first two subscales—support and resources. However, the third subscale used a 4-point rather than a 5-point scale. The goal continuity subscale stem also differed significantly from the stems of the other two scales compromising this subscale's face validity. For these two reasons, the goal continuity subscale was excluded from the measure.

Principal Component Analysis (PCA) was conducted to check Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity—two tests that indicate the suitability of data for structure detection. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy, $KMO = .84$ indicated that the data are adequate for running a factor analysis. ($KMO < 0.50$ suggests the data are inadequate for factor analysis.) Bartlett's test of sphericity $p < .001$

suggested that factor analysis is appropriate with this data (Yong & Pearce, 2013). Furthermore, the sample size ($N = 258$) exceeds recommendation of at least 10 participants per scale item (i.e., 150 participants required for 15 items; Yong & Pearce, 2013).

Exploratory Factor Analysis with oblique rotation excluding cases listwise ($n = 156$) of the 15-item scale yielded a four-component correlation matrix suggesting that factor 1 may be correlated with factor 3, $r = .44$. The fourth component with an eigenvalue of 1.01 added 6.75% to the cumulative variance totaling 63.27% of the explained variance. Further investigation revealed that the open response items, Item 4 and Item 15, comprised the fourth component. Modifications base on original scale development were explored. Moving Item 4 into Factor 1 with Items 1-3 and moving Item 15 into Factor 4 with Items 12-14 aligned with the development of the scale.

The EFA was repeated with excluded cases changed from listwise to pairwise to explore which items had missing data causing those cases to be excluded ($n = 156$ versus $n = 258$). Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity changed slightly, still demonstrating the appropriateness of EFA ($KMO = .84$, Bartlett's Test $p < .001$) (Yong & Pearce, 2013). Descriptive statistics revealed Item 4 and Item 15 had the most missing cases, 51 and 86 respectively (both open response). Therefore, the EFA was run to explore results excluding items 4 and 15. The 13-item factor analysis yielded a two-factor structure: Factor 1 (Institutional Resources) with an eigenvalue of 4.24 accounted for 32.6% of the variance, Factor 2 (Institutional Support) with an eigenvalue of 2.79 accounted for 21.4% of the variance. The 13-item two-factor component correlation, $r = -.11$, suggests that the factors ($r < .32$) are independent.

Finally, the analysis was run using orthogonal (Varimax) rotation from which factor

loadings were obtained. Table 4.1 shows the Institutional Compassion Two Factor Model—items and factor loadings.

Table 4.1
Exploratory Factor Analysis of the Three-Factor Institutional Compassion Scale.

Factor	Item	Factor Loading (through Varimax Rotation)
1	9. Housing accommodations	.82
	11. Food/physical needs	.82
	14. Access to physical and mental health resources	.77
	8. Access to technology or reliable internet	.73
	10. Access to physical spaces needed for your degree (e.g., art/music studio, research lab, etc.)	.72
	13. Financial needs	.68
	12. Access to student involvement groups or student cultural centers	.64
2	2. Academic Advisor	.71
	1. Faculty/Instructors	.69
	5. Campus Communications	.66
	6. Grading Policies	.63
	7. Financial Considerations	.60
	3. Coach/Club Advisor	.58

Goal Progress Scale. The Goal Progress Scale (GPS) was developed for this dissertation to assess perceptions of progress toward short- and long-term goals. The items for this scale were modified from a longitudinal study by Sheldon & Cooper (2008), in which, similar questions were asked during interviews to assess goal attainment. However, there was no indication in the original study of an existing factor structure. Therefore, an exploratory factor analysis and tests for reliability were deemed appropriate for this scale.

Principal Component Analysis was conducted to check Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett’s Test of Sphericity. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy, $KMO = .70$ indicated that the data are adequate for running a factor

analysis. Bartlett's test of sphericity $p < .001$ suggested that factor analysis is appropriate with this data (Yong & Pearce, 2013). Furthermore, the sample size ($N = 258$) significantly exceeds recommendation of at least 10 participants per scale item (i.e., 60 participants required for 6 items; Yong & Pearce, 2013).

Exploratory Factor Analysis with oblique rotation excluding cases listwise of the two-factor scale yielded a component correlation matrix suggesting that factor 1 may be correlated with factor 2, $r = .40$. However, that is expected since both subscales measure very similar constructs differing only by length of time (i.e., short-term within 1-3 years and long-term 4+ years). Finally, EFA using orthogonal (Varimax) rotation yielded factor loadings for the six-item scale. Table 4.2 shows the Goal Progress Two Factor Model—items and factor loadings.

Table 4.2
Exploratory Factor Analysis of the Two-Factor Goal Progress Scale.

Factor	Item	Factor Loading (through Varimax Rotation)
1	(Long-term goal)	
	7. To what extent would you say that you achieved or accomplished this goal?	.87
	6. To what extent did you make progress in the past year toward this goal?	.78
	8. How hard did you work on or try to achieve this goal?	.72
2	(Short-term goal)	
	2. To what extent did you make progress in the past year toward achieving this goal?	.89
	4. How hard did you work on or try to achieve this goal?	.78
	3. To what extent would you say that you achieved or accomplished this goal?	.61

Assumptions, Reliabilities, and Bivariate Correlations

The full- and sub-scales for TMGS and Institutional Compassion, as well as the full-scales for Sense of Belonging, Goal Progress, and Pandemic-Related Stress satisfied the

assumptions of linearity, homoscedasticity, independence, and normal distribution. All scales were examined for internal consistency and associations among the variables. Descriptive statistics with reliabilities are listed in Table 4.3; reliabilities of .70 or greater were deemed acceptable (Maruyama & Ryan, 2014). Bivariate correlations among study variables are presented in Table 4.4.

Table 4.3
Descriptive Statistics and Reliabilities for Full- and Sub-Scales

	<i>M</i>	<i>SD</i>	<i>r</i>
1. ICS-13	3.49	.52	.77
2. ICS-Support	3.47	.76	.78
3. ICS-Resources	3.48	1.04	.88
4. ICS-Goal Continuity	3.52	.55	.79
5. TMGS Overall	3.58	.56	.76
6. TMGS-AD (Adaptability)	3.79	.71	.75
7. TMGS-CI (Consistency of Interest)	3.10	.86	.74
8. TMGS-PE (Perseverance of Effort)	3.93	.74	.71
9. Sense of Belonging	3.39	.64	.92
10. Goal Progress	3.60	.78	.80
11. Stress (Pandemic-Related)	2.98	.50	.84

Table 4.4
Bivariate Correlations Among Study Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. ICS-13									
2. ICS-Support	.47**								
3. ICS-Resources	.78**	-.13*							
4. TMGS Overall	.08	.27**	-.11						
5. TMGS-AD	-.04	.27**	-.26**	.82**					
6. TMGS-CI	.18**	.07	.18**	.57**	.09				
7. TMGS-PE	.09	.27**	-.13*	.75**	.54**	.31**			
8. Belonging	.14*	.36**	-.10	.45**	.43**	.12	.44**		
9. Goal Progress	.05	.30**	-.13*	.24**	.27**	.00	.30**	.31**	
10. Stress	-.27**	-.22**	-.16**	-.34**	-.21**	-.38**	-.11	-.23**	-.05

Note: * $p < .05$, ** $p < .01$

Group Differences

ANOVAs were used to examine group differences—Gender [Women (n=156), Men (n=102), Another gender identity (n=2)]; Race/Ethnicity [Asian (n=45), Black/African American (n=48), Hispanic/Latino/a/x (n=28), White/European American (n=123), American Indian, Alaska Native, Native Hawaiian/Other Pacific Islander, Other Race/Ethnicity (n=16)]; -Year in College [First Year (n=65), Second Year (n=75), Third Year (n=69), Fourth+ Year (n=51)]; Parental Level of Education [High school degree or below (n=49), A two-year college degree or some college (no degree) (n=63), A four-year college degree (n=84), A degree beyond a four-year degree (such as Master’s, PhD, MD, JD, etc.) (n=64)]. Categorical variables were coded to represent a binary code. Binary codes established were gender (coded 1 if female and 0 otherwise), race/ethnicity (coded to represent 1 if White and 0 otherwise), parental education (coded 1 if high school degree or below and 0 otherwise), and year in college (coded 1 if first year and 0 otherwise). Table 4.5 shows only the significant group differences that informed the hypothesis-testing analyses.

Institutional compassion-overall was rated higher by White participants than Black ($p = .008$) and Latino/a/x participants ($p = .003$) and by those with higher parental education than those with a high school degree or below ($p = .030$). Perceived access to resources also differed by parental education (4-year+ vs. 2-year and 4-year degrees, $p = .045$ and $.024$, respectively). In addition, Latino/a/x participants perceived that they had less access to resources granted by the institution than Asian and White participants ($p = .043$ and $.014$, respectively). On the support subscale, group differences by year in college were found: third year students perceived less support than second year students ($p = .022$).

Grit-Adaptability was rated higher by Black participants than Asian and White

Primary Analyses

Research Question 1: Do grit and sense of belonging decrease the effect of pandemic-related stress?

Correlational analyses suggest that stress has significant associations with belonging and all grit scales except perseverance of effort; however, stress does not have a significant association with goal progress (Table 4.4). Hierarchical regression analyses were conducted controlling for group differences with the exception of TMGS-Consistency of Interest and TMGS-Perseverance of Effort; these two sub-scales of grit did not have significant group differences.

Hypothesis 1. Higher grit is associated with lower pandemic-related stress and more positive perceptions of goal progress.

After controlling for gender ($R^2 = .02, p = .025$), grit overall significantly predicts stress ($\Delta R^2 = .12, p < .001$). As grit overall increases, stress significantly decreases ($\beta = -0.35, t = -5.96, p < .001$). The subscales of grit had similar effects (See Table 4.6): adaptability to situations ($\Delta R^2 = .05, p < .001$); consistency of interest ($\Delta R^2 = .14, p < .001$); perseverance of effort ($\Delta R^2 = .02, p = .046$). Participants higher in grit overall and in each of the subscales exhibit lower pandemic related stress than participants with weaker grit.

Table 4.6
Hierarchical Regressions Grit Predicting Stress (Hypothesis 1a)

Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2	
	<i>B</i>	<i>SE</i>	β							
Hypothesis 1a										
1	Constant	3.17	.09		34.93	.000	5.07	.14	.02	.02
	Gender	-0.14	.06	-0.14	-2.25	.025				
2	Constant	4.31	.21		20.65		20.61	.37	.14	.12
	Gender	-0.16	.06	-0.16	-2.77	.006				
	TMGS-Overall	-0.31	.05	-0.35	-5.96	.000				
1	Constant	3.17	.09		34.93	.000	5.07	.14	.02	.02

	Gender	-0.14	.06	-0.14	-2.25	.025				
2	Constant	3.79	.19		19.87	.000	13.22	.26	.06	.05
	Gender	-0.16	.06	-0.16	-2.63	.009				
	TMGS-Adaptability	-0.15	.04	-0.22	-3.64	.000				
1	Constant	3.17	.09		34.93	.000	5.07	.14	.02	.02
	Gender	-0.14	.06	-0.14	-2.25	.025				
2	Constant	3.84	.13		29.14	.000	43.24	.40	.16	.14
	Gender	-0.13	.06	-0.13	-2.33	.020				
	TMGS-Consistency	-0.22	.03	-0.38	-6.58	.000				
1	Constant	3.17	.09		34.93	.000	5.07	.14	.02	.02
	Gender	-0.14	.06	-0.14	-2.25	.025				
2	Constant	3.51	.19		18.33	.000	4.01	.19	.04	.03
	Gender	-0.15	.06	-0.15	-2.41	.017				
	TMGS-Perseverance	-0.08	.04	-0.12	-2.00	.046				

Using simple regression (Table 4.7), grit overall significantly predicted perceptions of goal progress ($R^2 = .06, p < .001$) and, likewise, two of the subscales, adaptability to situations ($R^2 = .07, p < .001$) and perseverance of effort ($R^2 = .09, p < .001$). As grit overall increases, perceptions of goal progress also increase ($\beta = 0.24, t = 3.85, p < .001$). The same holds true for adaptability to situations ($\beta = 0.27, t = 4.28, p < .001$) and perseverance of effort ($\beta = 0.30, t = 4.80, p < .001$). Participants with higher scores in grit overall, adaptability to situations, and perseverance of effort exhibit stronger perceptions of goal progress than participants with lower grit scores.

Table 4.7
Individual Regressions Grit Predicting Goal Progress

	Unstandardized Coefficients		Standardized Coefficients	<i>p</i>	R^2
	<i>B</i>	<i>SE</i>	β		
TMGS-Overall	0.34	.09	0.24	.000	.06
TMGS-Adaptability	0.29	.07	0.27	.000	.07
TMGS-Consistency	0.00	.06	0.00	.058	.000
TMGS-Perseverance	0.32	.07	0.30	.000	.09

Note. TMGS- Overall, Adaptability to situations, and Perseverance of Effort were significant at the $\alpha = .05$ level.

Hypothesis 2. Stronger sense of belonging is associated with lower pandemic-related stress and more positive perceptions of goal progress.

After controlling for gender and housing ($R^2 = .01, p = .081$), belonging significantly predicts stress ($\Delta R^2 = .05, p < .001$). As belonging increases, stress significantly decreases ($\beta = -0.23, t = -3.78, p < .001$). Participants with stronger sense of belonging exhibit lower pandemic related stress than participants with weaker sense of belonging.

Testing the second part of the hypothesis, after controlling for housing ($R^2 = .00, p = .791$), belonging significantly predicts goal progress ($\Delta R^2 = .10, p < .001$). As belonging increases, goal progress also increases ($\beta = 0.31, t = 5.029, p < .001$). Participants with stronger sense of belonging exhibit stronger perceptions of goal progress than participants with weaker sense of belonging.

Research Question 2: What is the relationship between institutional compassion, sense of belonging, and pandemic-related stress?

Correlational analyses suggest that institutional compassion has significant correlations with belonging and COVID-19 pandemic related stress (Table 4.4). Preliminary analyses of the dependent variables evaluated if they satisfied the assumptions associated with multiple linear regression, i.e., normality, linearity, homoscedasticity, and absence of multicollinearity. Both the Sense of Belonging Scale and the Stress Appraisal Measure satisfied the assumptions.

Hypothesis 3. Higher institutional compassion is associated with stronger sense of belonging.

After controlling for housing, race/ethnicity, and parental level of education ($R^2 = .02, p = .12$), institutional compassion overall and the support subscale significantly predicted belonging ($\Delta R^2 = .02, p = .029$ and $\Delta R^2 = .12, p = .000$, respectively) (See Table 4.8). As

institutional compassion overall and support increase, belonging also increases ($\beta = .14$, $t = 2.19$, $p = .029$ and $\beta = 0.35$, $t = 6.01$, $p < .001$, respectively). The resources subscale does not predict belonging ($\Delta R^2 = .01$, $p = .082$). Overall, participants experiencing more institutional compassion expressed stronger sense of belonging than those experiencing less institutional compassion.

Table 4.8
Hierarchical Regressions Institutional Compassion Predicting Belonging (H3)

Model	ICS Scale	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	<i>F</i> (sig.)	<i>R</i>	<i>R</i> ²	ΔR^2
		<i>B</i>	<i>SE</i>	β						
ICS-Overall										
1	Constant	3.55	.20		17.86	.000	1.99 (.116)	.15	.02	.02
	Housing	-0.17	.08	-0.13	-2.08	.039				
	Race/Ethnicity	0.02	.02	0.06	0.98	.330				
	Parent Level of Ed.	-0.01	.04	-0.01	-0.12	.904				
2	Constant	3.01	.31		9.61	.000	2.71* (.031)	.20	.04	.02
	Housing	-0.17	.08	-0.13	-2.07	.040				
	Race/Ethnicity	0.02	.02	0.05	0.78	.438				
	Parent Level of Ed.	-0.02	.04	-0.03	-0.48	.636				
	ICS-Overall	0.17	.08	0.14	2.19	.029				
ICS-Support										
1	Constant	3.59	.15		24.18	.000	2.77 (.064)	.15	.02	.02
	Housing	-0.18	.08	-0.14	-2.27	.024				
	Year in College	0.03	.04	0.04	0.72	.476				
2	Constant	2.49	.23		10.87	.000	14.14** (.000)	.378	.143	.122
	Housing	-0.13	.08	-0.10	-1.67	.097				
	Year in College	0.02	.04	0.04	0.64	.521				
	ICS-Support	0.30	.05	0.35	6.01	.000				

Note. **p* < .05, ***p* < .001

Hypothesis 4. Higher institutional compassion is associated with lower pandemic-related stress.

Overall, participants experiencing higher institutional compassion had lower pandemic-related stress (See Table 4.9). After controlling for gender, race/ethnicity, and parental level of education ($R^2 = .03, p = .084$), institutional compassion overall significantly predicts stress ($\Delta R^2 = .07, p < .001$). As institutional compassion increases stress decreases ($\beta = -0.27, t = -4.42, p < .001$). The subscales had similar results. After controlling for gender and year in college ($R^2 = .02, p = .052$) the support subscale significantly predict stress ($\Delta R^2 = .05, p < .001$); as participants experience more support their stress significantly decreases ($\beta = -0.22, t = -3.66, p < .001$). Likewise for resources, after controlling for gender, race/ethnicity, and parental level of education ($R^2 = .03, p = .084$), the resources subscale significantly predicts stress ($\Delta R^2 = .02, p = .020$); as participants perceive more resources provided by the institution their stress significantly decreases ($\beta = -0.15, t = -2.34, p < .020$).

Table 4.9

Hierarchical Regressions Institutional Compassion Predicting Stress (H4)

Model		Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	<i>F</i> (sig.)	<i>R</i>	<i>R</i> ²	ΔR^2
		<i>B</i>	<i>SE</i>	β						
ICS Scale										
ICS-Overall										
1	Constant	3.20	.14		22.29	.000	2.24 (.084)	.16	.03	.03
	Gender	-0.13	.06	-.13	-2.13	.034				
	Race/Ethnicity	0.01	.02	.05	0.73	.468				
	Parent Level of Ed.	-0.03	.03	-.07	-1.15	.251				
2	Constant	3.98	.23		17.65	.000	6.69 (.000)**	.31	.10	.07
	Gender	-0.12	.06	-.12	-1.98	.049				
	Race/Ethnicity	0.02	.02	.07	1.19	.234				
	Parent Level of Ed.	-0.01	.03	-.03	-0.45	.651				
	ICS-Support	-0.26	.06	-.27	-4.42	.000				
ICS-Support										
1	Constant	3.11	.12		27.06	.000	3.00 (.052)	.15	.02	.02
	Gender	-0.14	.06	-.14	-2.25	.025				
	Year in College	0.03	.03	.06	0.96	.339				
2	Constant	3.61	.18		20.36	.000	6.55 (.000)**	.27	.07	.05
	Gender	-0.14	.06	-.14	-2.35	.019				
	Year in College	0.03	.03	.06	1.04	.301				
	ICS-Support	-0.15	.04	-.22	-3.66	.000				
ICS-Resources										
1	Constant	3.20	.14		22.29	.000	2.24 (.084)	.16	.03	.03
	Gender	-0.13	.06	-.13	-2.13	.034				
	Race/Ethnicity	0.01	.02	.05	0.73	.468				
	Parent Level of Ed.	-0.03	.03	-.07	-1.15	.251				
2	Constant	3.39	.16		20.61	.000	3.08 (.017)*	.22	.05	.02
	Gender	-0.12	.06	-.12	-1.98	.048				
	Race/Ethnicity	0.02	.02	.05	0.86	.392				
	Parent Level of Ed.	-0.03	.03	-.05	-0.83	.405				
	ICS-Resources	-0.07	.03	-.15	-2.34	.020				

Note. **p* < .05, ***p* < .001

Hypothesis 5. Institutional compassion moderates the relationship between sense of belonging and perceptions of goal progress.

The support subscale of the institutional compassion scale associated positively with both the Sense of Belonging Scale and Goal Progress Scale. Therefore, a hierarchical regression analysis was conducted to test effect of institutional compassion-support on the relationship between sense of belonging and perception of goal progress while controlling for the sociodemographic characteristics, housing, and year in college, for which group differences were revealed in preliminary analyses. In the first block analysis, the control variables were analyzed. In the second block analysis, the main effects ICS-Support and SBS were entered for the first model. In the third block analysis, the interaction term ICS-Support x SBS was entered for the second model (See Table 4.10). The main effects of ICS and SBS on goal pursuits were significant ($R^2 = .11, p < .001$); however, adding the interaction term did not improve the model ($\Delta R^2 = .00, p = .386$). Therefore, it cannot be concluded that institutional compassion moderates the relationship between belonging and goal pursuits.

Table 4.10

Hierarchical Regressions Institutional Compassion-Support Moderating the Relationship between Belonging and Goal Progress(H5)

Model		Unstandardized		Standardized	<i>t</i>	<i>p</i>	<i>F</i> (sig.)	<i>R</i>	<i>R</i> ²	ΔR^2
		Coefficients		Coefficients						
		<i>B</i>	<i>SE</i>	β						
1	Constant	3.53	.18		18.66	.765	.50 (.607)	.07	.00	.00
	Housing	-0.03	.10	-0.02	-0.30	.765				
	Year in College	0.05	.05	0.06	0.97	.336				
2	Constant	1.68	.35p		4.75	.000	9.64 (.000)	.38	.14	.14
	Housing	0.06	.10	0.04	0.66	.511				
	Year in College	0.04	.04	0.05	0.79	.430				
	Belonging	0.28	.08	0.23	3.57	.000				
	ICS-Support	0.23	.07	0.22	3.88	.001				
3	Constant	1.63	.36		4.58	.000	7.95 (.000)	.38	.15	.00
	Housing	0.07	.10	0.04	0.70	.486				
	Year in College	0.04	.04	0.05	0.78	.434				
	Belonging	0.28	.08	0.23	3.54	.000				
	ICS-Support	0.24	.07	0.23	3.51	.001				
	ICS-Support x Belonging	0.10	.09	0.07	1.08	.282				

Summary of Ranked Data—Sources of Doubt/Help for Goal Pursuits.

Participants were given two lists of items to rank order. The first list of items asked participants to identify and rank order (1 to 3) the top three sources contributing to doubt in their goal pursuits (Figure 4.1). The second list of items asked participants to identify and rank order (1 to 3) the top three sources of support in their goal pursuits (Figure 4.2). Given the ranking 1 = *highest source of doubt for attaining goals*, the lowest sum of all the rankings would indicate the highest source of doubt. Excluding “Other,” participants ranked “Feeling Disconnected from Family” as the greatest source of doubt (50 participants chose this as one of their top three, sum of rankings (1 to 3) = 107), followed by “Lack of ability to adapt” (79 participants chose this as one of their top three, sum of rankings (1 to 3) = 189) and “Feeling Disconnected from Teachers” (90 participants chose this as one of their top three, sum of ranking (1 to 3) = 207).

Given the ranking 1 = *highest source of support in their goal pursuits*, the lowest sum of all the rankings would indicate the highest source of support. When ranking sources of help for goal pursuits, participants identified “Faculty Support” as the greatest source of support (62 participants chose this as one of their top three, sum of rankings (1 to 3) = 155), followed by “Positive Stress” (94 chose this as one of their top three, sum of rankings (1 to 3) = 206), and “Peer Support” (94 chose this as one of their top three, sum of rankings (1 to 3) = 216).

Participant responses to this portion of the survey corroborates the finding that sense of belonging, in particular, is key for supporting student perceptions of attaining their goals. Not only did participants highly rank two items on the sources of doubts list that directly relate to sense of belonging, but they also ranked highly two items from the sources of support list that directly relate to sense of belonging.

Figure 4.1 Sources of Doubt for Goal Pursuits

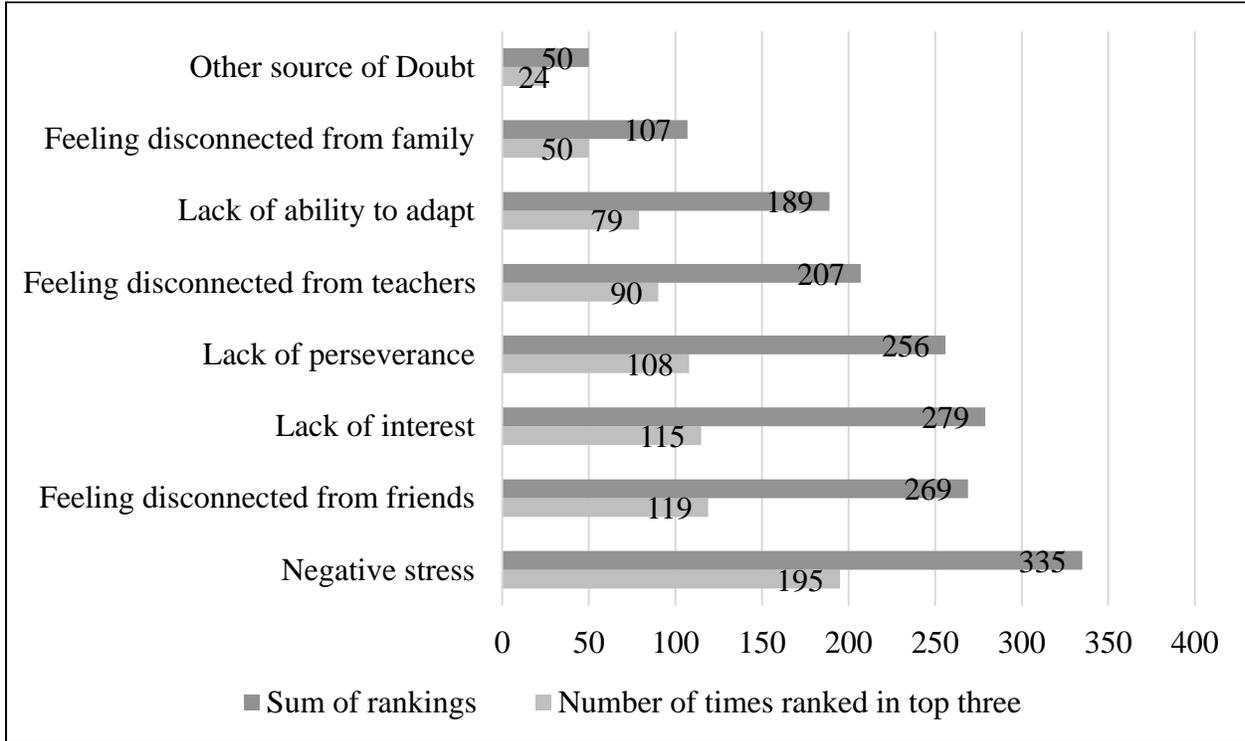
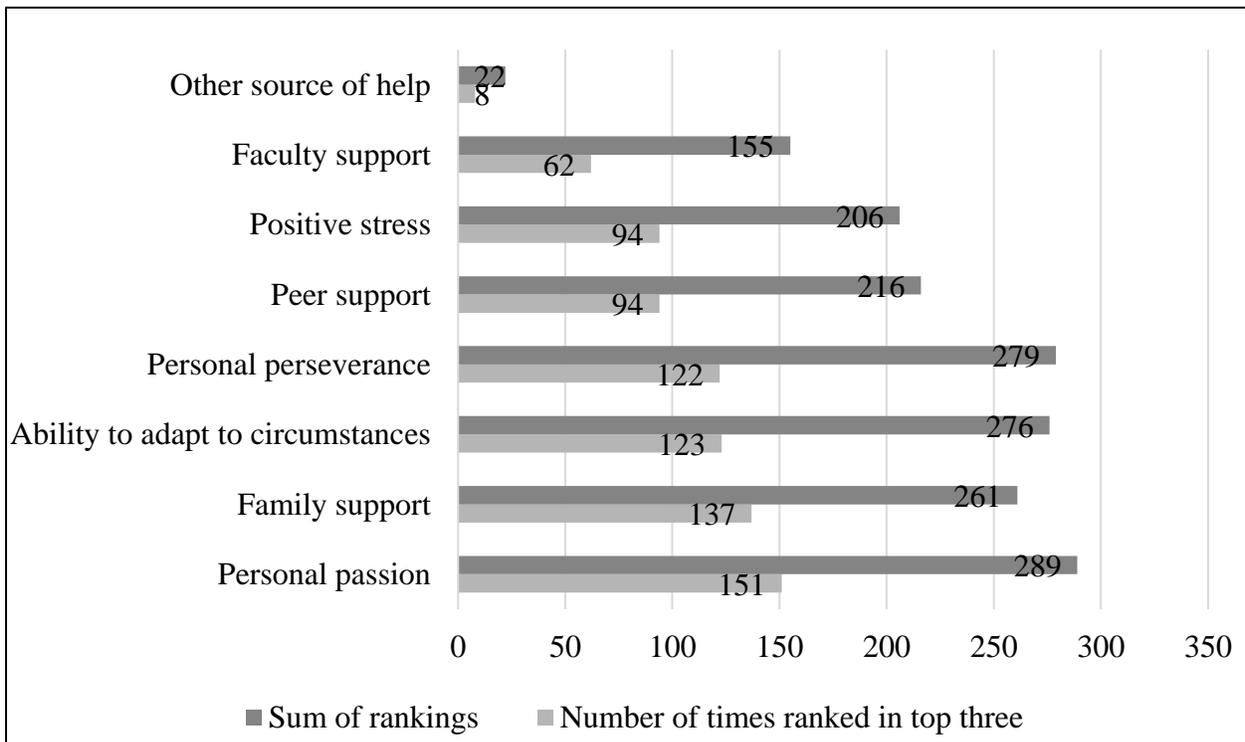


Figure 4.2 Sources of Help for Goal Pursuits



CHAPTER 5 - Discussion

Successful goal pursuits in every domain of human performance requires both interpersonal relationships and personal investment of intellectual capacity and tangible resources. The efforts toward autonomy, relatedness, and competency as described in SDT do not in and of themselves determine behavioral outcomes. These efforts are influenced by external conditions, consequences, and cultures (Deci & Ryan, 2000; Hove, 2017; Zhoc, et al., 2019). This is particularly important for collegiate emerging adults amid instability and uncertainty for whom the foundations of needs satisfaction across the lifespan are forming to foster motivation, behavior, and growth (Arnett, 2000; Deci & Ryan, 2000). “The basic tendency towards integrated functioning is perhaps the most fundamental characteristic of living things” (Deci & Ryan, 2000, p. 253).

The present study tested the hypotheses that grit, belonging, and institutional compassion have positive effects on emerging adult goal pursuits and can help students resist the effects of pandemic-related stress. Proponents of grit have touted its usefulness in goal pursuits especially through challenges and difficulties (e.g., Duckworth, et al., 2007); however, the definitions for challenges, difficulties, setbacks, and adversity were largely determined by participants’ perspectives. COVID-19 interjected global conditions for pandemic-related stress presenting a more broadly defined experience of difficulty, challenge, and adversity in which to test the usefulness of grit. Additionally, sense of belonging has a long history of predicting student outcomes, in particular academic outcomes (e.g., Morrow & Ackermann, 2012; Tinto, 1987) and helps to protect students from the effects of stress (Procentese, Capone, Caso, Donizzetti, & Gatti, 2020). Pandemic-related stress had the potential to impede belonging as institutions of higher education abruptly changed academic and social venues in responding to rapidly changing

conditions.

Results from this study show that emerging adult students with higher grit indicated stronger perceptions of goal progress. Grit entails passion, perseverance, and adaptability in goal pursuits corroborating SDT's assertion of the adaptive advantages of pursuing goals that also contribute to satisfying fundamental psychological needs (Deci & Ryan, 2000; Huéscar Hernández, et al., 2020). Higher grit also predicted lower pandemic-related stress—an important finding for emerging adult quality of experience and well-being.

Strong sense of belonging, likewise, contributes to positive perceptions of goal progress. SDT posits the contribution of coherence between self and social contexts to human growth and competence (Deci & Ryan, 2000; Zhoc, et al., 2019); thus, it is not surprising that stronger sense of belonging predicts higher perceptions of goal progress. Additionally, stronger sense of belonging predicts lower pandemic-related stress. Again, this corroborates the necessity of belonging to foster well-being and feelings of connectedness and care (Baumeister & Leary, 1995; Deci & Ryan, 2000).

Perhaps the most remarkable finding is that compassionate communications from colleges and universities influenced emerging adult perceptions of belonging, stress, and goal progress. SDT posits that these outcomes are a result of the interaction of needs satisfaction with social contexts that support versus thwart those needs (Deci & Ryan, 2000; Hove, 2017). Emerging adults who perceived institutional compassion amid COVID-19 related changes and challenges to academic and social venues reported stronger perceptions of belonging and goal progress. Furthermore, institutional compassion is also associated with diminished perceptions of stress. This is an important finding that is not limited to the context of COVID-19. As colleges and universities implement institutional initiatives designed to support emerging adult

transitions and development, it is imperative to intentionally communicate with compassion. The underpinning of compassion exemplifies the focus to support student success and shifts away from emphasizing retention efforts (Tinto, 1987).

Key Findings

Individuals with higher grit and stronger sense of belonging indicated more positive perceptions of goal progress than those who do not. Grit and sense of belonging contribute to emerging adult goal pursuits that also satisfy fundamental psychological needs for autonomy, relatedness, and competency (Deci & Ryan, 2000; Huéscar Hernández, et al., 2020; Nowell, 2017). Defining autonomy, relatedness, and competency as innate psychological needs allows for “predictions of social conditions that promote high-quality development and performance” (Deci & Ryan, 2000, p. 262). Among these social conditions, institutional compassion associates with stronger perceptions of belonging and diminished perceptions of pandemic-related stress. The finding that higher perceptions of institutional compassion in addition to higher grit and sense of belonging predict lower perceptions of pandemic-related stress are especially noteworthy. Institutional compassion holds a unique position and opportunity for supporting emerging adults’ efforts toward goals. And though COVID-19 presented sudden changes to academic and social venues, it also provided a unique opportunity to analyze the utility of grit and belonging for emerging adult goal pursuits. The findings that emerging adult grit and sense of belonging predict positive perceptions of goal progress are particularly salient given the inherent instability of this dynamic life stage.

Grit and belonging predict lower pandemic-related stress and more positive perceptions of progress toward goals.

Emerging adult who scored higher on grit overall, as well as on each of the sub-scales—

adaptability to situations, consistency of interest, and perseverance of effort—scored lower on pandemic-related stress. This is particularly important as it contributes to the previous literature the usefulness of grit amid challenges, difficulties, adversity, and setbacks. Duckworth, et.al. (2007) assert that “grit entails working strenuously toward challenges...despite failure, *adversity*, and plateaus in progress” (p. 1087, *emphasis added*). However, the adversity in previous literature is personally defined and, therefore, difficult to generalize.

Likewise, stronger sense of belonging predicts lower pandemic related stress. Sweeping changes during COVID-19 wrought widespread disruption that potentially increased stress for many, but sense of belonging was associated with lower perceptions of stress, which is very important—particularly for women who are more likely to experience stress than men (Browning, et al., 2021), likewise, emerging adults, for whom instability is characteristic (Arnett, 2000), benefit from stronger sense of belonging in reducing predicting lower pandemic-related stress. Admittedly, these findings may be an indication that emerging adults perceived the pandemic during spring 2020 as acute and temporary. It is documented that the pandemic may not have caused new stress but rather, exacerbated existing challenges faced by emerging adults regarding economic security and balancing school, work, and family responsibilities (Blankstein, Frederick, & Wolff-Eisenberg, 2020). Indeed, pandemic-related stress may not have resulted in widespread disruption of goal progress many in higher education expected; thus, grit and belonging may be of even greater importance in supporting emerging adult goal pursuits.

Moreover, the findings in this study substantiate the usefulness of grit and sense of belonging for sustaining emerging adults’ goal pursuits. Grittier individuals are less likely to drop out of long-term commitments (Eskreis-Winkler, et al., 2014) and are more likely to achieve academic success (Hwang, et al., 2017). Emerging adult adaptability to situations and

perseverance of effort also support goal progress as previously noted by others (e.g., Akos & Jen, 2017, Datu, et al., 2017). However, consistency of interest did not emerge as an indicator of goal progress. This is not unexpected since consistency of interest has been previously linked with the initial commitment to goals and associated with parental relatedness (Datu, 2017).

Individuals may not need to endorse constant interest to be considered “gritty” (Datu, Valdez, & King, 2016). Emerging adults often explore a variety of options with few things decided for certain (Arnett, 2000), and pursuit of these options may vary depending upon autonomy (Deci & Ryan, 2000). Thus, adaptability to situations and perseverance of effort may be of greater importance in supporting emerging adult goal pursuits.

Likewise, sense of belonging eases emerging adult transitions to unfamiliar academic structures and significantly contributes to goal progress. It is important to note that participants identified “Feeling Disconnected from Teachers” as one of the greatest sources of doubt for goal pursuits. Warm and caring relationships with teachers satisfy students need for relatedness, i.e., belonging (Deci & Ryan, 2000). Not only does belonging contribute to students’ well-being amid college transitions (e.g., homesickness, Watt & Badger, 2019), but belonging also contributes to the continuation of college studies (e.g., Wilson & Gore, 2013). This is a remarkable indication of the benefit of their meaningful relationships within the university and their commitment to continuing their academic pursuits. Though studies from individual institutions suggest otherwise, e.g., Arizona State University found diminished expectations for graduation and career pursuits (Aucejo et al., 2020), it is noteworthy that belonging has been shown to have a protective effect in the midst of these stressful events threatening SDT psychological health and well-being (e.g., COVID-19, Arslan, 2020), thus supporting students in their goal pursuits.

Institutional compassion had mixed results.

Institutional compassion positively associated with grit (perseverance of effort, in particular), belonging, and goal progress, which is especially important for emerging adults. As institutions demonstrated tangible support for student needs and continuation of goal pursuits, they encouraged students' grit, belonging, and goal progress. Thus, institutional compassion supports optimal circumstances for the satisfaction of SDT fundamental needs—autonomy (grit), relatedness (belonging), and competence (goal pursuits) (Zhoc, et al., 2019). However, even though institutional compassion increased sense of belonging and decreased stress, it did not strengthen the relationship between belonging and stress as hypothesized.

Institutional compassion is key for easing emerging adult student transitions. Emerging adults experience feeling in between adolescence and adulthood (Arnett, 2000); part of that transition for many includes attending college where students face numerous changes in social and academic expectations. Institutional compassion supports belonging, which contributes to emerging adults' efforts to establish new, meaningful, and fulfilling relationships (Furstenberg, 2010). Many colleges and universities provide social venues creating structure and easing emerging adult transitions to alleviate feelings of instability (Luyckx, De Witte, & Gossens, 2011). Students' connectedness, i.e., belonging, has long been established as an indicator of their intention to persist (Morrow & Ackerman, 2012; Tinto, 1987), and satisfying this need has been linked to motivation (Deci & Ryan, 2000; Hove, 2019). The influence of institutional compassion on both students' sense of belonging and stress demonstrates the importance of responding to students' needs (Kanov, et al., 2004).

Stress has been associated with negative outcomes for college students, including poor academic outcomes (Saklofske, et al., 2010), anxiety (Towbes & Cohen, 1996), and

psychological distress (e.g., COVID-19; Ye, et al., 2020). In the midst of COVID-19 related stressors, participants who perceived more institutional compassion exhibited less stress. Institutional compassion supports emerging adults as they establish their niches in unfamiliar social structures (Arnett, 2000), which aside from COVID-19 can be very stressful. Thus, institutional compassion is particularly important for individuals facing greater exposure to stress (e.g., individuals with marginalized group status navigating predominantly White institutional structures, Kundu, 2017, Kwon, 2017; women, who are more likely than men to suffer from pandemic-related stress, Browning, et al., 2021).

Contributions and Implications

Individuals demonstrate higher quality behavior and experience greater psychological well-being when their fundamental needs for autonomy, relatedness, and competence are met (Deci & Ryan, 2000; Huéscar Hernández, et al., 2020; Hope et al., 2016; Luyckx, et al., 2016; Nowell, 2017; Werner, et al., 2016; Zhoc, et al., 2019). Grit and belonging matter for emerging adult goal pursuits—in the context of widespread challenge or adversity, both are essential. Though grit has been identified as useful for mitigating challenges, difficulties, and setbacks (e.g., Duckworth, et al., 2007), it has not been previously tested amid globally defined adversity. The results of this study substantiate the claim that grit sustains goal pursuits despite stressful events. Additionally, supportive and compassionate communications from college/university representatives are important to boost students' sense of belonging and to reduce stress. It is particularly important for leaders in post-secondary institutions to attend to not only the “why” but also the “how” in communicating policies and procedures. Emerging adult students face uncertainty and myriad changes in their transitions from home (e.g., Wilson & Gore, 2013) and institutional compassion positively affects their sense of belonging and lessens the stress they

experience amid these transitions. Thus, it is important to communicate institutional policies and procedures with care and compassion, especially for those most affected by stress (e.g., marginalized populations, Golden, 2017; Kundu, 2017; Kwon, 2017; women, Browning, et al., 2021; Kroshus, Hawrilenko, & Browning, 2020).

Limitations

The timing of this study, mid-June 2020, does not account for the longer-term impact of COVID-19 pandemic-related stress. It is possible that participants perceived the pandemic as temporary not realizing that their next year of university studies would also be altered to accommodate COVID-19 protocols. Thus, future investigations can address this gap through designing longitudinal studies that examine these relationships over time.

The Institutional Compassion Scale designed for this study needs further revisions, analysis, and testing to refine this measure of institutional compassion and address disparities in the subscale stems. While internal reliabilities for the full- and sub-scales were good, the goal continuity sub-scale had to be eliminated from analyses due to issues with face validity as well as differing stem and Likert-type scale compared to the other two sub-scales.

Likewise, the Goal Progress Scale would benefit from further analyses and testing to determine revisions that refine this measure to be more sensitive in assessing goal pursuits. As it stands now, the measure for goal progress specifically focused on indicators of continued work and effort toward the goal/s and did not include items assessing continued interest in the goal/s. Including these items may strengthen the measure to assess progress more comprehensively toward completion/attainment of short- and long-term goals.

Future Research

More studies are needed on how institutional compassion supports student goal pursuits. Institutional compassion associated positively with grit-perseverance of effort, sense of belonging, and goal progress. Additionally, institutional compassion reduces the effect of pandemic-related stress. It would be useful to measure institutional compassion periodically across the course of emerging adult collegiate goal pursuits to see if institutional compassion varies substantially and, if its effect on grit, belonging, and stress over time influences emerging adult goal pursuits. We know from past studies that institutional practices influence belonging (e.g., Tinto, 1987) and stress (e.g., Saklofske, et al., 2010). Previous grit research also suggests that grit may be amenable to intervention (Weisskirch, 2016). So then, institutional compassion, in addition to the policies and programs aimed at helping college students, may increase grit and sense of belonging, and reduce stress.

Conclusion

Despite the limitations, this study has theoretical and practical contributions. As regards to theory, the results offer evidence regarding the influences of grit and belonging on goal pursuits as well as the influence of institutional compassion on grit, belonging, and stress—*amid adverse conditions*. The study proposes that having flexibility, consistency of interest, perseverance of effort, meaningful connections, within caring and compassionate post-secondary environments matter for successful goal pursuits. Concerning practice, college/university administration, staff and faculty are highly encouraged to conceptualize and implement compassionate communications to boost students' sense of belonging, to contribute to students' grit, (i.e., flexibility, passion, and perseverance toward long-term goal pursuits), and to mitigate students' stress.

References

- Akos, P., & Kretchmar, J. (2017). Investigating Grit as a Non-Cognitive Predictor of College Success. *The Review of Higher Education*, *p 40(2)*, 163-186. doi:10.1353/rhe.2017.0000
- Araújo, M. L., Simpson, A. V., Marujo, H. Á, & Lopes, M. P. (2019). Selfless and strategic, interpersonal and institutional: A continuum of paradoxical organizational compassion dimensions. *Journal of Political Power*, *12(1)*, 16-39. doi:10.1080/2158379x.2019.1573611
- Arnett, J. J. (2000). Emerging Adulthood: A Theory of Development from the Late Teens through the Twenties. *American Psychologist*, *55(5)*, 469-480.
- Arslan, G. (2020). Loneliness, college belongingness, subjective vitality, and psychological adjustment during coronavirus pandemic: Development of the College Belongingness Questionnaire. *Journal of Positive School Psychology*.
<https://journalppw.com/index.php/JPPW/article/view/240/91>
- Aucejo, E. M., French, J., Araya, M. P. U., & Zafar, B. (2020). The impact of COVID-19 on student experiences and expectations: Evidence from a survey. *Journal of public economics*, *191*, 104271.
- Austin, E. J., Saklofske, D. H., & Mastoras, S. M. (2010). Emotional intelligence, coping and exam-related stress in Canadian undergraduate students. *Australian Journal of Psychology*, *62(1)*, 42–50. <https://doi.org/10.1080/00049530903312899>
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117(3)*, 497-529. doi:10.1037//0033-2909.117.3.497
- Benita, M., Shane, N., Elgali, O., & Roth, G. (2017). The important role of the context in which achievement goals are adopted: an experimental test. *Motivation and Emotion*, *41*, 180-195.

doi: [10.1007/s11031-016-9600-8](https://doi.org/10.1007/s11031-016-9600-8)

- Blankstein, M. (2020). Student Experiences During the Pandemic Pivot. Retrieved January 15, 2021, from <https://sr.ithaka.org/publications/student-experiences-during-the-pandemic-pivot/>
- Bono, G., Reil, K., & Hescox, J. (2020). Stress and wellbeing in urban college students in the US during the COVID-19 pandemic: Can grit and gratitude help? *International Journal of Wellbeing*, 10(3).
- Browning, M.H.E.M., Larson, L.R., Sharaievska, I., Rigolon, A., McAnirlin, O., Mullenbach, L., Cloutier, S., Vu, T.M., Thomsen, J., Reigner, N., Metcalf, E.C., D'Antonio, A., Helbich, M., Bratman, G.N., Alvarez, H.O. (2021). Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PLoS One*, 16(1):e0245327. [doi:10.1371/journal.pone.0245327](https://doi.org/10.1371/journal.pone.0245327). PMID: 33411812; PMCID: [PMC7790395](https://pubmed.ncbi.nlm.nih.gov/PMC7790395/).
- Burnell, L., & Agan, D. (n.d.). 6. Burnell compassionate Care Tool. Retrieved November 12, 2020, from <http://internationaljournalofcaringsciences.org/docs/6.%20Burnell%20Compassionate%20Care%20Tool.pdf>
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). New York and London: Routledge.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). Perceived Stress Scale. PsychTESTS Dataset. <https://doi.org/10.1037/t02889-000>
- Condition of College & Career Readiness 2017. (n.d.). Retrieved from http://www.act.org/content/dam/act/secured/documents/cccr2017/CCCR_National_2017.pdf
- Crandall, C. S., Preisler, J. J., & Aussprung, J. (1992). Undergraduate Stress Questionnaire.

PsycTESTS Dataset. <https://doi.org/10.1037/t20495-000>

- Datu, J. A. (2017). Sense of relatedness is linked to higher grit in a collectivist setting. *Personality and Individual Differences, 105*, 135-138.
- Datu, J. A. D., Yuen, M., & Chen, G. (2017). Development and validation of the Triarchic Model of Grit Scale (TMGS): Evidence from Filipino undergraduate students. *Personality and Individual Differences, 114*, 198–205. doi: 10.1016/j.paid.2017.04.012
- Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry, 11*(4), 227-268.
doi:10.1207/s15327965pli1104_01
- Dohrenwend, B. S., & Dohrenwend, B. P. (1982). Some Issues in Research on Stressful Life Events. *Handbook of Clinical Health Psychology*, 91–102. https://doi.org/10.1007/978-1-4613-3412-5_5
- Duckworth, A. L. & Gross, J. J. (2014). Self-control and grit: Related but separable determinants of success. *Current Directions in Psychological Science, 23*(5), 319-325.
- Duckworth, A. L., Kirby, T. A., Tsukayama, E., Berstein, H., & Ericsson, K. A. (2011). Deliberate Practice Spells Success. *Social Psychological and Personality Science, 2*(2), 174-181. doi:10.1177/1948550610385872
- Duckworth, A. L., Peterson, C., Matthews, M. D. & Kelly, D. R. (2007). Grit: Perseverance and Passion for Long-Term Goals. *Journal of Personality and Social Psychology, 92*(6), 1087 – 1101.
- Duckworth, A. L., & Quinn, P. D. (2009). Development and Validation of the Short Grit Scale (Grit-S). *Journal of Personality Assessment, 91*(2), 166-174.
- Eskreis-Winkler, L., Shulman, E. P., Beal, S.A. & Duckworth, A. L. (2014). The grit effect:

- predicting retention in the military, the workplace, school and marriage. *Frontiers in Psychology*, 5(36), 1-12. doi:10.3389/fpsyg.2014.00036
- Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of Belonging in College Freshmen at the Classroom and Campus Levels. *The Journal of Experimental Education*, 75(3), 203-220.
- Furstenberg, Jr., F. (2010). On a New Schedule: Transitions to Adulthood and Family Change. *The Future of Children*, 20(1), 67-87.
- Gaudreau, P., Carraro, N., & Miranda, D. (2012). From goal motivation to goal progress: the mediating role of coping in the Self-Concordance Model. *Anxiety, Stress & Coping*, 25(5), 507–528. doi: 10.1080/10615806.2011.628015
- Glass, D. C., & Singer, Jerome E. (1972). Urban stress: experiments on noise and social stressors. Academic Press.
- Goodenow, C. (1993b). The Psychological Sense of School Membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, 30(1), 79-90.
- Golden, N. A. (2017). "There's Still That Window That's Open": The Problem With "Grit". *Urban Education*, 52(3), 343-369.
- Hagerty, B. M., & Patusky, K. (1995). Developing a Measure of Sense of Belonging. *Nursing Research*, 44(1). doi:10.1097/00006199-199501000-00003
- Huéscar Hernández, E., Moreno-Murcia, J. A., Cid, L., Monteiro, D., & Rodrigues, F. (2020). Passion or Perseverance? The Effect of Perceived Autonomy Support and Grit on Academic Performance in College Students. *International Journal of Environmental Research and Public Health*, 17(6), 2143. <https://doi.org/10.3390/ijerph17062143>
- Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating “Sense of

- Belonging” in First-Year College Students. *Journal of College Student Retention: Research, Theory & Practice*, 4(3), 227–256. doi: 10.2190/dryc-cxq9-jq8v-ht4v
- Holt, L. J. (2014). Help seeking and social competence mediate the parental attachment—college student adjustment relation. *Personal Relationships*, 21, 640-654.
- Hope, N. H., Milyavskaya, M., Holding, A. C., & Koestner, R. (2016). The humble path to progress: Goal-specific aspirational content predicts goal progress and goal vitality. *Personality and Individual Differences*, 90, 99–107.
<https://doi.org/10.1016/j.paid.2015.10.038>
- Hove, T. A. (2017). *Self-determination Theory and Higher Education Student Development* (dissertation). ProQuest, Ann Arbor, MI.
- Hwang, M. H., Lim, H. J., & Ha, H. S. (2017). Effects of Grit on the Academic Success of Adult Female Students at Korean Open University. *Psychological Reports*, 003329411773483.
doi:10.1177/0033294117734834
- Jin, B., & Kim, J. (2017). Grit, Basic Needs Satisfaction, and Subjective Well-Being. *Journal of Individual Differences*, 38(1), 29-35. doi:10.1027/1614-0001/a000219
- Kanadiya, M. K., & Sallar, A. M. (2011). Swine Flu Knowledge, Beliefs, and Misconceptions Questionnaire. PsycTESTS Dataset. <https://doi.org/10.1037/t75774-000>
- Kanov, J. M., Maitlis, S., Worline, M. C., Dutton, J. E., Frost, P. J., & Lilius, J. M. (2004). Compassion in Organizational Life. *American Behavioral Scientist*, 47(6), 808–827.
<https://doi.org/10.1177/0002764203260211>
- Koestner, R., Otis, N., Powers, T. A., Pelletier, L., & Gagnon, H. (2008). Autonomous Motivation, Controlled Motivation, and Goal Progress. *Journal of Personality*, 76(5), 1201–1230. doi: 10.1111/j.1467-6494.2008.00519.x

- Kroshus, E., Hawrilenko, M., & Browning, A. (2021). Stress, self-compassion, and well-being during the transition to college. *Social Science & Medicine*, 269, 113514.
<https://doi.org/10.1016/j.socscimed.2020.113514>
- Kundu, A. (2017). Grit and Agency: A Framework for Helping Students in Poverty to Achieve Academic Greatness. *National Youth-At-Risk Journal*, 2(2),
<https://doi.org/10.20429/nyarj.2017.020205>
- Kwon, H. W. (2017). The sociology of grit: Exploring grit as a sociological variable and its potential role in social stratification. *Sociology Compass*, 11(12). doi:10.1111/soc4.12544
- Lan, Yu-Li, Huang, Wan-Tsui, Kao, Chi-Lan, & Wang, Hui-Jung. (2020). The relationship between organizational climate, job stress, workplace burnout, and retention of pharmacists. *Journal of Occupational Health*, 62(1), e12079–n/a.
<https://doi.org/10.1002/1348-9585.12079>
- Lavigne, G. L., Vallerand, R. J., & Crevier-Braud, L. (2011). Belongingness Orientation Scale. *PsycTESTS Dataset*. doi: 10.1037/t20177-000
- Leary, M. R., Kelly, K. M., Cottrell, C. A., & Schreindorfer, L. S. (2013). Construct Validity of the Need to Belong Scale: Mapping the Nomological Network. *Journal of Personality Assessment*, 95(6), 610-624. doi:10.1080/00223891.2013.819511
- Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The Social Connectedness and the Social Assurance scales. *Journal of Counseling Psychology*, 42(2), 232-241.
doi:10.1037//0022-0167.42.2.232
- Lehman, K. A., Burns, M. N., Gagen, E. C., & Mohr, D. C. (2012). Development of the Brief Inventory of Perceived Stress. *Journal of Clinical Psychology*, 68(6), 631–644.
<https://doi.org/10.1002/jclp.21843>

- Lown, B. A., Muncer, S. J., & Chadwick, R. (2015). Schwartz Center Compassionate Care Scale™. PsycTESTS Dataset. <https://doi.org/10.1037/t48188-000>
- Lupoli, M. J., Zhang, M., Yin, Y., & Oveis, C. (2020). A conflict of values: When perceived compassion decreases trust. *Journal of Experimental Social Psychology*, 91, 104049. <https://doi.org/10.1016/j.jesp.2020.104049>
- Luyckx, K., De Witte, H., & Goossens, L. (2011). Perceived instability in emerging adulthood: The protective role of identity capital. *Journal of Applied Developmental Psychology*, 32(3), 137–145. <https://doi.org/10.1016/j.appdev.2011.02.002>
- Luyckx, K., Duriez, B., Green, L. M., & Negru-Subtirica, O. (2016). Identity Processes and Intrinsic and Extrinsic Goal Pursuits: Directionality of Effects in College Students. *Journal of Youth and Adolescence*, 46(8), 1758–1771. <https://doi.org/10.1007/s10964-016-0626-8>
- Lyon, A. C. (2014). *Teaching and Fostering Qualities Related to Grit* (Doctoral dissertation, New England College, 2014). Ann Arbor, MI: ProQuest.
doi:<https://search.proquest.com/docview/1616622618/?pq-origsite=primo>
- MacCann, C., & Roberts, R. D. (2010). DEVELOPMENT OF A STUDENT HEALTH ASSESSMENT SYSTEM: HEALTH KNOWLEDGE, ATTITUDES, AND BEHAVIORS IN MIDDLE-SCHOOL STUDENTS. *ETS Research Report Series*, 2010(1), i-42. <https://doi.org/10.1002/j.2333-8504.2010.tb02211.x>
- Maruyama, G., & Ryan, C. S. (2014). *Research methods in social relations*. John Wiley & Sons.
- Millea, M., Wills, R., Elder, A., & Molina, D. (2018). What Matters in College Student Success? Determinants of College Retention and Graduation Rates. *Education*, 138(4), 309–322. Retrieved from <https://search-ebshost->

com.ezproxy.lib.uwm.edu/login.aspx?direct=true&AuthType=ip,uid&db=a9h&AN=1301
65011&site=ehost-live&scope=site

Morrow, J. A., & Ackermann, M. E. (2012). Intention to Persist and Retention of First-Year Students: The Importance of Motivation and Sense of Belonging, *College Student Journal*, 46(3), 483-491.

Mosanya, M. (2020). Buffering academic stress during the COVID-19 pandemic related social isolation: grit and growth mindset as protective factors against the impact of loneliness. *International journal of applied positive psychology*, 1-16.

Murtaugh, P. A., Burns, L. D., & Schuster, J. (1999). *Research in Higher Education*, 40(3), 355–371. doi: 10.1023/a:1018755201899

NCHEMS Information Center for Higher Education Policymaking and Analysis. (n.d.). Retrieved from <http://www.higheredinfo.org/dbrowser/index.php?measure=19>

Nowell, C. (2017). The influence of motivational orientation on the satisfaction of university students. *Teaching in Higher Education*, 22(7), 855–866.
<https://doi.org/10.1080/13562517.2017.1319811>

O’Neal, C. R., Espino, M. M., Goldthrite, A., Morin, M. F., Weston, L., Hernandez, P., & Fuhrmann, A. (2016). Grit Under Duress. *Hispanic Journal of Behavioral Sciences*, 38(4), 446–466. <https://doi.org/10.1177/0739986316660775>

Pascarella, E. T., Mayhew, M. J., Rockenbach, A. B., Bowman, N. A., Seifert, T. A., Wolniak, G. C., & Terenzini, P. T. (2016). *How college affects students. 21st century evidence that higher education works*. San Francisco, CA: Jossey-Bass.

Peacock, E. J., & Wong, P. T. P. (1990). The Stress Appraisal Measure (SAM): A multidimensional approach to cognitive appraisal. *Stress Medicine*, 6, 227-236.

- Pillow, D. R., Malone, G. P., & Hale, W. J. (2015). The need to belong and its association with fully satisfying relationships: A tale of two measures. *Personality and Individual Differences*, 74, 259-264. doi:10.1016/j.paid.2014.10.031
- Porter, S. R., Rumann, C., & Pontius, J. (2011). The validity of student engagement survey questions: Can we accurately measure academic challenge? *New Directions for Institutional Research*, 2011(150), 87–98. doi: 10.1002/ir.391
- Power Calculation for Pearson's & Spearman's Correlation. (n.d.). Retrieved from <https://www.anzmtg.org/stats/PowerCalculator/PowerCorrelation>
- Powers, T. A., Koestner, R., & Zuroff, D. C. (2007). Self-Criticism, Goal Motivation, and Goal Progress. *Journal of Social and Clinical Psychology*, 26(7), 826–840. doi: 10.1521/jscp.2007.26.7.826
- Procentese, F., Capone, V., Caso, D., Donizzetti, A., & Gatti, F. (2020). Academic Community in the Face of Emergency Situations: Sense of Responsible Togetherness and Sense of Belonging as Protective Factors against Academic Stress during COVID-19 Outbreak. *Sustainability*, 12(22), 9718. doi:10.3390/su12229718
- Ross SE, Niebling BC, & Heckert TM. Sources of stress among college students. *College Student Journal*. 1999;33(2):312. Accessed November 17, 2020. <https://search-ebshost-com.ezproxy.lib.uwm.edu/login.aspx?direct=true&AuthType=ip,uid&db=s3h&AN=1984378&site=ehost-live&scope=site>
- Ruthig, J. C., Hanson, B. L., & Marino, J. M. (2009). A three-phase examination of academic comparative optimism and perceived academic control. *Learning and Individual Differences*, 19(4), 435–439. <https://doi.org/10.1016/j.lindif.2009.03.004>
- Schwartz, S. J., Côté, J. E. & Arnett, J. J. (2005). Identity and Agency in Emerging Adulthood:

Two Developmental Routes in the Individualization Process. *Youth & Society*, 37(2), 201-227.

Sheldon, K. M., & Cooper, M. L. (2008). Goal Striving Within Agentic and Communal Roles: Separate but Functionally Similar Pathways to Enhanced Well-Being. *Journal of Personality*, 76(3), 415–448. doi: 10.1111/j.1467-6494.2008.00491.x

Skowron, E. A., Wester, S. R., & Azen, R. (2004). Differentiation of Self Mediates College Stress and Adjustment. *Journal of Counseling & Development*, 82(1), 69–78.
<https://doi.org/10.1002/j.1556-6678.2004.tb00287.x>

Soper, D. (n.d.). Free Statistics Calculators: Home. Retrieved from
<http://www.danielsoper.com/statcalc>

Strauss, C., Lever Taylor, B., Gu, J., Kuyken, W., Baer, R., Jones, F., & Cavanagh, K. (2016). What is compassion and how can we measure it? A review of definitions and measures. *Clinical Psychology Review*, 47, 15–27. <https://doi.org/10.1016/j.cpr.2016.05.004>

Sturman, E. D., & Zappala-Piemme, K. (2017). Development of the grit scale for children and adults and its relation to student efficacy, test anxiety, and academic performance. *Learning and Individual Differences*, 59, 1–10. doi: 10.1016/j.lindif.2017.08.004

Strom, R. E. & Savage, M. W. (2014). Assessing the Relationships Between Perceived Support from Close Others, Goal Commitment, and Persistence Decisions at the College Level. *Journal of College Student Development*, 55(6), 531-547. DOI: 10.1353/csd.2014.0064

Thomas, S. L. (2000). Ties That Bind: A Social Network Approach to Understanding Student Integration and Persistence. *The Journal of Higher Education*, 71(5), 591. doi: 10.2307/2649261

Thompson, T. L. (Ed.). (2014). *Encyclopedia of health communication*. Sage Publications.

- Tinto, V. (1987). *Leaving college: rethinking the causes and cures of student attrition*. Chicago: University of Chicago Press.
- Tobolowsky, B. F., Cox, B. E., & Chunoo, V. S. (2017). Bridging the Cultural Gap: Relationships Between Programmatic Offerings and First-Generation Student Benchmarks. *Journal of College Student Retention: Research, Theory & Practice*, 152102511774237. doi: 10.1177/1521025117742377
- Towbes, L. C., & Cohen, L. H. (1996). Chronic stress in the lives of college students: Scale development and prospective prediction of distress. *Journal of Youth and Adolescence*, 25(2), 199–217. <https://doi.org/10.1007/bf01537344>
- Travers, C. J., Morisano, D., & Locke, E. A. (2014). Self-reflection, growth goals, and academic outcomes: A qualitative study. *British Journal of Educational Psychology*, 85(2), 224–241. doi: 10.1111/bjep.12059
- Undergraduate Retention and Graduation Rates. (May 2018). Retrieved from https://nces.ed.gov/programs/coe/indicator_ctr.asp
- Use the Data*. The Integrated Postsecondary Education Data System. (n.d.).
<https://nces.ed.gov/ipeds/use-the-data>.
- Wang, Y., Cullen, K. L., Yao, X., & Li, Y. (2013). Personality, freshmen proactive social behavior, and college transition: Predictors beyond academic strategies. *Learning and Individual Differences*, 23, 205-212. doi:10.1016/j.lindif.2012.09.010
- Watt, S. E., & Badger, A. J. (2009). Effects of social belonging on Homesickness: An application of THE belongingness Hypothesis. *Personality and Social Psychology Bulletin*, 35(4), 516-530. doi:10.1177/0146167208329695
- Weisskirch, R. S. (2016). Grit, Self-Esteem, Learning Strategies and Attitudes and Estimated and

Achieved Course Grades among College Students. *Current Psychology*, 37(1), 21–27.

<https://doi.org/10.1007/s12144-016-9485-4>

Werner, K. M., Milyavskaya, M., Foxen-Craft, E., & Koestner, R. (2016). Some goals just feel easier: Self-concordance leads to goal progress through subjective ease, not effort.

Personality and Individual Differences, 96, 237–242.

<https://doi.org/10.1016/j.paid.2016.03.002>

West, S. G., Finch, J. F., & Curran, P. J. (1995). Structural equation modeling: concepts, issues and applications SAGE Publications. Thousand Oaks, CA.

Willingham, D. T. (2016). Ask the Cognitive Scientist "Grit" is Trendy, Can It Be Taught?

American Educator, 40(2), 28-32. Retrieved February 6, 2019, from

<https://www.aft.org/sites/default/files/ae-summer2016willingham.pdf>.

Williams, G. C., Hedberg, V. A., Cox, E. M., & Deci, E. L. (2000). Extrinsic Life Goals and Health-Risk Behaviors in Adolescents¹. *Journal of Applied Social Psychology*, 30(8), 1756–1771. <https://doi.org/10.1111/j.1559-1816.2000.tb02466.x>

Wilson, S., & Gore, J. (2013). An Attachment Model of University Connectedness. *The Journal of Experimental Education*, 81(2), 178-198. doi:10.1080/00220973.2012.699902

Wolters, C. A., & Hussain, M. (2014). Investigating grit and its relations with college students' self-regulated learning and academic achievement. *Metacognition and Learning*, 10(3), 293-311. doi:10.1007/s11409-014-9128-9

Ye, B., Wu, D., Im, H., Liu, M., Wang, X., & Yang, Q. (2020). Stressors of COVID-19 and stress consequences: The mediating role of rumination and the moderating role of psychological support. *Children and Youth Services Review*, 118, 105466.

<https://doi.org/10.1016/j.childyouth.2020.105466>

York, T. T., Gibson, C., & Rankin, S. (2015). Defining and Measuring Academic Success.

Retrieved from Practical Assessment, Research & Evaluation, 20(5):

<http://pareonline.net/getvn.asp?v=20&n=5>

Zhoc, K. C., King, R. B., Law, W., & McInerney, D. M. (2019). Intrinsic and extrinsic future goals: Their differential effects on students' self-control and distal learning outcomes.

Psychology in the Schools, 56(10), 1596–1613. <https://doi.org/10.1002/pits.22287>

Zumbrunn, S., McKim, C., Buhs, E., & Hawley, L. R. (2014). Support, belonging, motivation, and engagement in the college classroom: A mixed method study. *Instructional Science*, 42, 661-684. doi:10.1007/s11251-014-9310-0

Appendix

Grit, Belonging, Goal Attainment, COVID-19

University of Wisconsin-Milwaukee

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

Study title: Grit, Belonging and Institutional Compassion Contribute to Emerging Adult Goal Pursuits and Reduce Pandemic-Related Stress

Researchers:

- Cynthia Schmahl, Ph.D. student, Educational Psychology, Cognitive and Developmental Sciences
- Jacqueline Nguyen, Ph.D., Associate Professor, Educational Psychology, Cognitive and Developmental Sciences

We're inviting you to participate in a research study. Participation is completely voluntary. If you agree to participate, you can always change your mind and withdraw. There are no negative consequences, whatever you decide.

What is the purpose of this study?

We want to understand how a student's sense of belonging to a college/university affects one's interest in and effort toward goals. We also want to understand how pandemic stress influences students' interest in and effort toward goals.

What will I do?

You will be asked to participate in this study by completing an online survey. In the survey, you will be asked to answer about 100 questions. The survey will take 10-15 minutes. This survey will ask questions about your efforts to complete tasks, your interests, your feelings about being part of a group, your feelings of stress, your institutional support, and your perceptions of goal attainment.

Risks:

- Though the survey questions do not pose any anticipated risk, you might not wish to answer some. You can skip any questions you don't want to answer or stop the survey entirely.
- Online data being hacked or intercepted: This is a risk you experience any time you provide information online. We're using a secure system to collect this data, but we can't completely eliminate this risk.
- Breach of confidentiality: There is a chance your data could be seen by someone who shouldn't have access to it. We're minimizing this risk in the following ways:
 - ✓ All data collected from participants will be anonymous.
 - ✓ We'll store all electronic data on a password-protected, encrypted computer.

Possible benefits:

This research study will help us understand how feeling part of a group influences students' efforts and interests in attaining goals during a time when stress is particularly high.

Estimated number of participants: 250

How long will it take? 10-15 minutes

Costs: None

Compensation:

You will be compensated the amount you agreed upon before you entered into the survey.

Future research:

Data (anonymous) may be shared with other researchers. You won't be told specific details about these future research studies.

Confidentiality and Data Security:

We will not collect identifying information for the research.

Where will data be stored?

The one-time, online survey will be administered in Qualtrics. The survey data collected in the Qualtrics program is password protected and accessible only to the researchers. No identifying information is collected and stored with the survey responses. The anonymous data will be downloaded to a password-protected digital file for statistical analyses accessible only to the researchers. Back-up data will be kept on an external hard-drive in a locked filing cabinet drawer in the locked home of the researchers.

How long will it be kept?

30 days after completion of data collection, the researchers will delete all survey response data from Qualtrics. Anonymous downloaded data will be destroyed 7 years after the conclusion of the study.

Who can see my data?

We (the researchers) will have access to the coded responses from the surveys. This is so we can analyze the data and conduct the study.

The Institutional Review Board (IRB) at UWM, the Office for Human Research Protections (OHRP), or other federal agencies may review all the study data. This is to ensure we're following laws and ethical guidelines.

We may share our findings in publications or presentations. If we do, the results will be aggregate (grouped) data, with no individual results.

Contact information:

For questions about the research, complaints, or problems:

- Cynthia Schmahl, cschmahl@uwm.edu or schmahlc@lakeland.edu
- Jacqueline Nguyen, jnguyen39@uwm.edu.

For questions about your rights as a research participant, complaints, or problems:

Contact the UWM IRB (Institutional Review Board; provides ethics oversight) at 414-662-3544 OR irbinfo@uwm.edu.

Please print or save this screen if you want to be able to access the information later.

IRB #: 20.337 IRB Approval Date: May 18, 2020

Agreement to Participate: If you meet the eligibility criteria below and would like to participate in this study, select "yes" and click the arrow button below to begin the survey.

Remember, your participation is completely voluntary, and you're free to withdraw at any time.

- ✓ I am between the ages of 18 and 24.
- ✓ I am a full-time college student (I have not graduated).
- ✓ I do NOT work more than 30 hours per week.
- ✓ I do NOT have dependents (no spouse, no child).

- Yes, I agree to participate in this study. (1)
- No, I do not wish to participate. (2)

SCREENING SURVEY

We care about the quality of our survey data and hope to receive the most accurate measures of your opinions, so it is important to us that you thoughtfully provide your best answer to each question in the survey.

Do you commit to providing your thoughtful and honest answers to the questions in this survey?

- I will provide my best answers. (1)
- I will not provide my best answers. (2)
- I cannot promise either way. (3)

How old are you? _____

What is your enrollment status?

- Part-time undergraduate student (1)
- Full-time undergraduate student (2)
- Graduated from college (3)

During a typical academic term (i.e., fall/spring NOT during COVID-19/coronavirus pandemic), how many hours do you work (at a job/place of employment for pay)?

- Less than 30 hours per week (1)
- 30 or more hours per week (2)

What is your marital status?

- Single, never married (1)
- Domestic partnership or married (2)
- Separated, divorced or widowed (3)

How many children do you have? _____

DEMOGRAPHIC CHARACTERISTICS

Please answer the following questions about yourself.

During a typical academic term (i.e. fall/spring not during COVID-19/coronavirus pandemic), do you live on campus?

- Yes (1)
- No (2)

To which gender identity do you most identify?

- Woman (1)
- Man (2)

Another gender identity (3)

Please specify: _____

Which racial/ethnic identity best describes you?

- American Indian/Alaska Native (1)

- Asian (2)
 - Black/African American (3)
 - Hispanic/Latino/a/x (4)
 - Native Hawaiian/Other Pacific Islander (5)
 - White/European American (6)
 - Other (7)
- Please specify: _____

Please indicate the highest level of education of your parent/s (pick the one with the most education).

- High school degree or below (1)
- A two-year college degree or some college (no degree) (2)
- A four-year college degree (3)
- A degree beyond a four-year degree (such as Master's, PhD, MD, JD, etc.) (4)

Please indicate your year in college:

- Freshman (first year) (1)
- Sophomore (second year) (2)
- Junior (third year) (3)
- Senior (fourth+ year) (4)

STUDY SURVEY
INSTITUTIONAL COMPASSION SCALE

The next set of questions ask about your perceptions of the impact of COVID-19/coronavirus pandemic on various aspects of your personal college experience.

Given the response of your college to COVID-19/coronavirus pandemic, please rate how much care for you as a human being do you feel from each of the following using the following scale:

1 = Not at all, 2 = Slightly, 3 = Moderately, 4 = Considerably, 5 = Extremely

Faculty/Instructors	1	2	3	4	5
Academic Advisor	1	2	3	4	5
Coach/Club Advisor	1	2	3	4	5
Any other college representative, such as a mentor or other staff; please specify role (not person's name): _____	1	2	3	4	5

Given the response of your college to COVID-19/coronavirus pandemic, please rate how much support do you feel in relation to the following using the following scale:

1 = Not at all, 2 = Slightly, 3 = Moderately, 4 = Considerably, 5 = Extremely

Campus Communications	1	2	3	4	5
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Grading Policies	1	2	3	4	5
Financial Considerations	1	2	3	4	5

Given the response of your college to COVID-19/coronavirus pandemic, please rate how much challenge have you personally experienced with each of the following using the following scale:

1 = Not at all, 2 = Slightly, 3 = Moderately, 4 = Considerably, 5 = Extremely

Access to technology or reliable internet	1	2	3	4	5
Housing accommodations	1	2	3	4	5
Access to physical spaces needed for your degree (e.g., art/music studio, research lab, etc.)	1	2	3	4	5
Food/physical needs	1	2	3	4	5
Access to student involvement groups or student cultural centers	1	2	3	4	5
Financial needs	1	2	3	4	5
Access to physical and mental health resources	1	2	3	4	5
Other; please specify: _____	1	2	3	4	5

Given the response of your college to COVID-19/coronavirus pandemic, please rate the likelihood that you will do the following using the following scale:

1 = Definitely not, 2 = Not likely, 3 = Very likely, 4 = Definitely will

Enroll 20/21 Academic Year	1	2	3	4
Enroll 21/22 Academic Year	1	2	3	4
Graduate from College	1	2	3	4
Find a Job Related to Degree	1	2	3	4

QUALITY CHECK QUESTION

What year do you expect to graduate?

GRIT SCALES

This section asks about your approach to tasks in general.

Please identify the extent to which each statement generally describes you using the following scale:

1 = Not at all like me, 2 = Not much like me, 3 = Somewhat like me, 4 = Mostly like me, 5 = Very much like me.

1) I often set a goal but later choose to pursue a different one.	1	2	3	4	5
2) New ideas and projects sometimes distract me from previous ones.	1	2	3	4	5
3) I have been obsessed with a certain idea or project for a short time but later lost interest.	1	2	3	4	5
4) I have difficulty maintaining my focus on projects that take more than a few months to complete.	1	2	3	4	5
5) I finish whatever I begin.	1	2	3	4	5
6) Setbacks don't discourage me.	1	2	3	4	5
7) I am a hard worker.	1	2	3	4	5
8) I am diligent.	1	2	3	4	5
9) I appreciate new opportunities that come into my life.	1	2	3	4	5
10) Changing plans or strategies is important to achieve my long-term goals in life.	1	2	3	4	5
11) Changes in life motivate me to work harder.	1	2	3	4	5
12) I am able to cope with the changing circumstances in life.	1	2	3	4	5
13) I am always motivated to improve my skills or abilities.	1	2	3	4	5

SENSE OF BELONGING SCALE

This section is about your feelings regarding connection with others in general.

Please identify the extent to which each statement generally describes you using the following scale:

1 = Completely Untrue, 2 = Mostly Untrue, 3 = Equally Untrue and True, 4 = Mostly True, 5 = Completely True.

1) I feel comfortable asking a teacher for help if I do not understand course-related material.	1	2	3	4	5
2) I feel comfortable asking a question in class.	1	2	3	4	5
3) I feel comfortable volunteering ideas or opinions in class.	1	2	3	4	5

4) If I had a reason, I would feel comfortable seeking help from a faculty member outside of class time (i.e., during office hours, etc.).	1	2	3	4	5
5) Speaking in class is easy because I feel comfortable.	1	2	3	4	5
6) I feel comfortable seeking help from a teacher before or after class.	1	2	3	4	5
7) I feel comfortable socializing with a faculty member outside of class.	1	2	3	4	5
8) I feel comfortable talking about a problem with faculty.	1	2	3	4	5
9) I rarely talk to other students in my class.	1	2	3	4	5
10) I feel comfortable asking a teacher for help with a personal problem.	1	2	3	4	5
11) If I miss class, I know students who I could get the notes from.	1	2	3	4	5
12) I feel that a faculty member would take the time to talk to me if I needed help.	1	2	3	4	5
13) I could call another student from class if I had a question about an assignment.	1	2	3	4	5
14) I feel that a faculty member really tried to understand my problem when I talked about it.	1	2	3	4	5
15) Other students are helpful in reminding me when assignments are due or when tests are approaching.	1	2	3	4	5
16) I feel that a faculty member would be sensitive to my difficulties if I shared them.	1	2	3	4	5
17) I feel comfortable contributing to class discussions.	1	2	3	4	5
18) I know very few people in my classes.	1	2	3	4	5
19) I feel that a faculty member would be sympathetic if I was upset.	1	2	3	4	5
20) No one in my classes know anything personal about me.	1	2	3	4	5
21) I have discussed personal matters with students who I met in class.	1	2	3	4	5
22) It is difficult to meet other students in class.	1	2	3	4	5
23) I have developed personal relationships with other students in class.	1	2	3	4	5

24) I invite people I know from class to do things socially.	1	2	3	4	5
25) I discuss events which happen outside of class with my classmates.	1	2	3	4	5
26) I have met classmates outside of class to study for an exam.	1	2	3	4	5

QUALITY CHECK QUESTION

What do you like most about attending college?

GOAL PROGRESS SCALE

This section asks about your short-term and long-term goals.

Please identify your most important short-term (within 1-3 years) academic (school-related) goal.

Thinking of your important short-term (within 1-3 years) academic (school-related) goal, please rate your current progress using the following scale:

1 = Not at all to 5 = A great deal/completely.

To what extent did you make progress in the past year toward achieving this goal?	1	2	3	4	5
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To what extent would you say that you achieved or accomplished this goal?	1	2	3	4	5
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Thinking of your important short-term (within 1-3 years) academic (school-related) goal, please rate the following question on the following scale:

1 = Not at all to 5 = Tried/worked as hard as I could.

How hard did you work on or try to achieve this goal?	1	2	3	4	5
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Please identify your most important long-term (four or more years) academic/career goal.

Thinking of your long-term (four or more years) academic/career goal please rank the following using the following scale:

1 = Not at all to 5 = A great deal/completely

To what extent did you make progress in the past year toward achieving this goal?	1	2	3	4	5
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To what extent would you say that you achieved or accomplished this goal?	1	2	3	4	5
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Thinking of your long-term (four or more years) academic/career goal please rank the following using the following scale:

1 = Didn't try at all to 5 = Tried/worked as hard as I could

How hard did you work on or try to achieve this goal? 1 2 3 4 5

Given the context of COVID-19/coronavirus pandemic, which of the following caused significant doubt for you about reaching your goals? (Please move and order your top three in the box provided.)

Please order your top three.

_____ Feeling disconnected from family

Lack of interest

Feeling disconnected from friends

_____ Lack of perseverance

Negative stress (such as dread, anxiety, etc.)

_____ Feeling disconnected from teachers

Lack of ability to adapt

Other source of doubt in reaching your goals (please specify): _____

Given the context of COVID-19/coronavirus pandemic, which of the following significantly help you with reaching your goals? (Please move and order your top three in the box provided.)

Please order your top three.

_____ Family support

Personal passion

Peer support

_____ Personal perseverance

Positive stress (such as anticipation, eagerness, etc.)

_____ Faculty support

Ability to adapt to circumstances

Other source of help for reaching your goals (please specify): _____

STRESS APPRAISAL MEASURE

This section asks for your thoughts/feelings from your perspective of how COVID-19/coronavirus pandemic affects you. There are no right or wrong answers.

Please respond according to how you feel COVID-19/coronavirus pandemic affects you right NOW. Please respond to each statement by selecting the option that most fits you using the following scale:

1 = Not at all, 2 = Slightly, 3 = Moderately, 4 = Considerably, 5 = Extremely.

1) This a totally hopeless situation.	1	2	3	4	5
2) This situation creates tension in me.	1	2	3	4	5
3) The outcome of this situation is uncontrollable by anyone.	1	2	3	4	5
4) There is someone or some agency I can turn to for help if I need it.	1	2	3	4	5
5) This situation makes me feel anxious.	1	2	3	4	5
6) This situation has important consequences for me.	1	2	3	4	5
7) This is going to have a positive impact on me.	1	2	3	4	5
8) I am eager to tackle this problem.	1	2	3	4	5
9) I will be affected by the outcome of this situation.	1	2	3	4	5
10) I can become a stronger person because of this problem.	1	2	3	4	5
11) The outcome of this situation will be negative.	1	2	3	4	5
12) I have the ability to do well in this situation.	1	2	3	4	5
13) This situation has serious implications for me.	1	2	3	4	5
14) I have what it takes to do well in this situation.	1	2	3	4	5
15) There is help available to me for dealing with this problem.	1	2	3	4	5
16) This situation taxes or exceeds my coping resources.	1	2	3	4	5
17) There are sufficient resources available to help me in dealing with this situation.	1	2	3	4	5
18) It is beyond anyone's power to do anything about this situation.	1	2	3	4	5
19) I am excited thinking about the outcome of this situation.	1	2	3	4	5
20) This situation is threatening.	1	2	3	4	5

21) The problem is unresolvable by anyone.	1	2	3	4	5
22) I will be able to overcome the problem.	1	2	3	4	5
23) There is someone who can help me to manage this problem.	1	2	3	4	5
24) I perceive this situation as stressful.	1	2	3	4	5
25) I have the skills necessary to achieve a successful outcome to this situation.	1	2	3	4	5
26) This event requires coping efforts on my part.	1	2	3	4	5
27) This situation has long-term consequences for me.	1	2	3	4	5
28) This is going to have a negative impact on me.	1	2	3	4	5

FINAL QUALITY CHECK QUESTION

Please use this space to clarify or expand on any of your responses on this survey.

CURRICULUM VITAE

EDUCATION

University of Wisconsin-Milwaukee

Ph.D. in Educational Psychology-Cognitive and Developmental Sciences **2021**

Dissertation Title: “An Examination of Whether Grit, Belonging, and Institutional Compassion Contribute to Emerging Adult Goal Pursuits and Reduce Pandemic-Related Stress”

Advisor: Jacqueline Nguyen

Lakeland University (formerly Lakeland College)

M.Ed. **2006**

Thesis: “The Impact of School Board Leadership on Student Achievement”

Lakeland University (formerly Lakeland College)

B.A. in Mathematics, English, and Education **1990**

Areas of Concentration: Mathematics and Education

Minor: English

RESEARCH INTERESTS

Investigations into emerging adult transitions, growth, and goal pursuits and factors that support or diminish their efforts.

TEACHING EXPERIENCE

Lakeland University (formerly Lakeland College)

Adjunct Instructor-Probability and Statistics **2017 to present**

Developed syllabus and overall course structure, and administered all grades.

Lakeland University (formerly Lakeland College)

Guest Lecturer Psychology **2018-2019**

Developed with full professor presentations on emerging adulthood, grit, and belonging.

Lakeland University (formerly Lakeland College)

Adjunct Instructor-Intermediate Algebra **2015-2017**

Developed syllabus and overall course structure, and administered all grades.

Lakeland University (formerly Lakeland College)
Adjunct Instructor-Mathematics for Elementary/Middle school Teachers 2010
Developed syllabus and overall course structure, including weekly lab practicum, and administered all grades.

Lakeland University (formerly Lakeland College)
Adjunct Instructor-Mathematics Workshop 2007 – 2015
Developed syllabus and overall course structure, and administered all grades.

RELATED EXPERIENCE

Kiel Area School District
School Board President 1999 – 2014

Kiel Area School District
School Board Clerk 1994 – 1999

Kiel Area School District
School Board Member 1993 – 1994

Lakeland University (formerly Lakeland College)
Graduate Studies Program Coordinator 1994 – 1996

RESEARCH EXPERIENCE

Dissertation Research 2018 – 2021
University of Wisconsin-Milwaukee
Department of Educational Psychology-Cognitive and Developmental Sciences

Cultures & Contexts 2014 – 2020
University of Wisconsin-Milwaukee
Department of Educational Psychology-Cognitive and Developmental Sciences

- Performed statistical operations on data in SPSS including recoding data for preliminary and primary analyses.
- Collaborated with faculty and fellow graduate students.
- Reviewed STICS study transcripts using coding techniques to categorize qualitative data for potential research about grit and belonging.

Master's Research 2005 – 2006
Lakeland University (formerly Lakeland College)
Department of Education

PUBLICATIONS

- "Mitigating Effects of Grit, Belonging and Institutional Compassion on Emerging Adult Pandemic Stress and Goal Progress"
Emerging Adulthood **In Progress**
- "Kiel Board Members Can Influence Student Achievement"
Wisconsin School News **2006**

CONFERENCE PRESENTATIONS

- "Emerging Adult College Students' Grit, Belonging and Goals in the Context of COVID-19 Pandemic Stress"
Society for Research in Child Development Biennial Meeting **2021**
- "Lighthouse in Action: Board Actions Resulting in Proven Success"
WASB 86th State Education Convention **2007**
- "More About the Lighthouse Study"
WASB Leadership for Student Achievement Conference **2006**
- "Leadership for Student Achievement"
WASB Region 8 Meeting **2005**
- "The Superintendent's Assistant: A Board Member's View"
Third Annual WASSA Fall Workshop **2005**

AWARDS, SCHOLARSHIPS, MEMBERSHIPS

- Chancellor's Graduate Student Award
WASB Levels 1-5 Board Member Development Awards
- Marsha Krueger Scholarship
Arthur & Magdalene Singer Scholarship
- Pi Lambda Theta
Wisconsin Association of School Boards (WASB)