11-2020

Resilience Mediates the Relationship Between Socio-Cognitive Mindfulness and Perceived Stress in Academic Middle Managers in Higher Education

Rachel R. Slaymaker
Abilene Christian University, rachel.slaymaker@acu.edu

This dissertation, directed and approved by the candidate's committee, has been accepted by the College of Graduate and Professional Studies of Abilene Christian University in partial fulfillment of the requirements for the degree

Doctor of Education in Organizational Leadership

Dr. Joey Cope, Dean of the College of Graduate and Professional Studies

November 2, 2020

Dissertation Committee:

Dr. K.K. O'Byrne, Chair

Dr. Jennifer Duffy (Nov 9, 2020 10:30 EST)

Dr. Jennifer Duffy

Dr. Jaime Goff

Abilene Christian University

School of Educational Leadership

Resilience Mediates the Relationship Between Socio-Cognitive Mindfulness and Perceived Stress in Academic Middle Managers in Higher Education

A dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Education in Organizational Leadership

by

Rachel R. Slaymaker, LMSW

November 2020

Dedication

This manuscript is dedicated to my three boys—Adrian, Noah, and Luke—without their unconditional love, patience, and understanding, I may have never completed this degree and dissertation. Words cannot fully describe my appreciation for their sacrifice and perseverance over the past four years. May this work be a testament to our motto—"We can do hard things."

This is also dedicated to my grandparents, Dean and Irene Tittel, who instilled a strong work ethic and sacrificed much to ensure my love for learning never ceased. I am who I am today because of their relentless support.

Acknowledgments

First and foremost, I thank Dr. Kristin Koetting O'Byrne, my dissertation chair, for her mentorship throughout this process. Her optimistic spirit, strengths-based coaching, rigorous expectations, and critical feedback were precisely what I needed in this program. I am a humbled scholar because of her. I am also indebted to the other dissertation committee members: Drs. Jaime Goff and Jennifer Duffy. Their encouragement and feedback reinforced the importance of this study, and I am eternally grateful.

A note of thanks must also go to Drs. Tom Winter and Peter Williams. Each has mentored me in their own unique way and appreciated my curiosity, questioning, and incessant opinions and musings on management and leadership. Both have left a lasting impression on my career as a doctoral student and an emerging academic middle manager.

A note of appreciation also goes to the women in my life who have been my biggest sounding boards and loudest cheerleaders. Each is a boss in her own right. Successfully completing a doctoral dissertation amid a global health crisis, significant economic instability, major racial reckoning, and one of the most contentious elections in history, all while working full-time and being a mother and wife, is not for the faint of heart. It most certainly takes a village. Each of these women has supported me in ways I did not even know I needed: Lyndsey Grover, whose endless loyalty and persistent realism keeps me sane; Lori Anne Shaw, who coerced me into the program and whose deep insight and thoughtfulness keeps me mindful; and Megan Allred, whose unwavering support and brave leadership model characteristics I hope to exude. Also, I am incredibly grateful for my amazingly supportive colleagues in Social Work, who have provided essential advice and consultation, not only on enduring the doctorate but doing so as a woman with multiple roles; so thanks to Dr. Stephanie Hamm, Dr. Kyeonghee

Jang, Dr. Amy Kalb, and Professors Katelin East and Katherine Hennecke. Each of them has inspired me to focus on just doing the next right thing.

It is important to reinforce my unyielding gratitude to the three most influential people in my life—Adrian, Noah, and Luke—who never questioned my ability or endurance to get to this point even when I did. Each day they teach me the Fruits of the Spirit—joy, peace, patience, kindness, goodness, gentleness, faithfulness, and self-control. I am a better human because of these three.

Abstract

Faculty, staff, and administrators in higher education have experienced rising stress levels due to an increasingly turbulent environment amid constant change and uncertainty. In particular, academic middle managers experience increasingly high demands and significant stressors in the ever-changing landscape of higher education. Most research that addresses stress among academic middle managers has focused on the management of stressors and emphasized the need for additional training and technical support rather than how to address adaptive challenges. However, emerging research has provided promising evidence of the positive effects of mindfulness in reducing the perception of stress and enhancing resilience, both of which support the importance of adaptive challenges and improve job-related and organizational outcomes. Despite the recent rise in mindfulness scholarship from the Eastern perspective, there is a dearth of literature on the relationship between Langer's (2014) construct of socio-cognitive mindfulness, resilience, and stress. This quantitative correlational study aimed to understand how socio-cognitive mindfulness predicts perceived stress among academic middle managers in higher education and whether the relationship between mindfulness and perceived stress is mediated by resilience. Academic middle managers within four-year U.S. institutions of higher education—department chairs, associate/assistant deans, and deans—were recruited via email, and a total of 163 participants completed an online survey. Since the researcher collected data during the initial response to the novel coronavirus (COVID-19) pandemic, supplemental questions were included and addressed the satisfaction of the institution's response to transitioning to an online teaching, learning, and working environment as well as work stress and overall stress levels amid the pandemic. Findings indicated that socio-cognitive mindfulness predicted perceived stress at a statistically significant level, and resilience fully mediated the

relationship between mindfulness and stress. In addition, results identified that socio-cognitive mindfulness, resilience, and perceived stress levels were higher among academic middle managers than other populations in previous studies. This study was the first to indicate that higher socio-cognitive mindfulness levels resulted in lower perceived stress and that socio-cognitive mindfulness may be a direct path to reducing stress and an indirect path by building resources like resilience. Discussion and recommendations that consider the COVID-19 pandemic's influence on the results and implications are also addressed.

Keywords: mindfulness, socio-cognitive mindfulness, perceived stress, resilience, academic middle managers, higher education leaders, COVID-19, pandemic

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

Faculty, staff, and administrators in higher education are currently experiencing higher levels of stress than in previous decades. One reason for the higher levels of stress is that it is an increasingly turbulent environment (Horvath, 2016; LeBlanc, 2018; Shin & Jung, 2014; Vilkinas & Cartan, 2015). Work in academia has historically been viewed as low stress (Fisher, 1994) as autonomy, knowledge and content expertise, and freedom of expression have been highly valued and well-protected throughout the development of higher education in the United States (Gillespie et al., 2001; Thelin, 2011). However, over the past two decades and particularly since the 2008 recession, demands within higher education have shifted as fiscal responsibility (e.g., budget cuts) and accountability (e.g., student loan debt) have been questioned by external stakeholders. This disruptive period of transformation has also been compounded by the need to increase access by delivering quality education using innovative technological platforms that continue to rapidly evolve. Thelin (2011) attested that "an element of continuity is that [U.S.] colleges and universities are constantly changing, both by accident and by design" (p. ix). Hence, those in academia experience an environment in constant flux and encounter stress perhaps more than previously realized.

Research suggested that middle managers in academia—deans, associate/assistance deans, department chairs—are especially susceptible to heightened stress due to a lack of resources amidst organizational constraints, the complexity of dual roles as scholar and administrator, and an emphasis on enrollment numbers and new programs over rigorous and high-quality sustainable programs (Armstrong & Woloshyn, 2017; Gmelch & Burns, 1994; Vilkinas & Cartan, 2015; Wild et al., 2003). In addition, when leaders experience significant change in their organization, stress levels increase (Gligorovski et al., 2018; Stickle & Scott,

2016). Academic culture and customs of higher education have experienced a staggering rate of change particularly over the past ten years (Blumenstyk, 2015; Kezar, 2017; Selingo, 2013). Leaders in higher education, particularly middle managers, experience significant stress that may negatively influence many aspects of their personal and professional lives, including health and mental health issues, job dissatisfaction, burnout, role conflict, and role overload (Michailidis & Asimenos, 2002; Shin & Jung, 2014; Stickle & Scott, 2016). At the individual level, the adverse outcomes of stress can result in morbidity and at extreme levels, mortality (Nielsen et al., 2008). At the organizational level, stress impacts productivity loss and increased turnover (Schulte et al., 2017).

In general, evidence has affirmed that stress significantly impedes a leader's ability to thrive and adapt in evolving environments (Bowling et al., 2017; Gligorovski et al., 2018). Some leadership scholarship has addressed how leaders' stress may influence not only their own health and performance, but also followers' levels of stress and burnout (Harms et al., 2017). Leader stress also influences the level of supportive leadership within an organizational climate and ultimately impacts follower stress (Nangia Sharma & Pearsall, 2016). Researchers have linked lower levels of stress with increased resilience among leaders and proposed that strategies for improving both stress and resilience are essential for effective leadership (Brendel et al., 2016; Stickle & Scott, 2016). Particularly within higher education management, scholarship has emphasized characteristics or traits, such as conscientiousness, growth mindset, learning organization, of effective leaders and organizations as well as the need for resilience within the constant changing milieu of higher education (Gillespie et al., 2001; Leih & Teece, 2016; Moran, 2016; Pincus et al., 2017). Much of the current literature frequently links stress and resilience to leadership outcomes, and more recently there has been particular emphasis on mindfulness as a

tool for improving both stress and resilience. Additionally, Roche et al. (2014) theorized that "mindfulness may encourage leaders to accurately perceive and draw from" one's own positive psychological mechanism, such as resilience, "because the process of mindfulness facilitates a separation between self and the event and this in turn facilitates the reflective choice of actions and reactions" that aid in resiliency (p. 481). However, no studies to date have examined the connection between mindfulness, stress, and resilience within the context of higher education leadership.

Resilience in Turbulent Environments

In the evolution of leadership and organizational scholarship, researchers have well-documented effective management practices amid transformation and innovation within most industries, and higher education may benefit from applying the gained wisdom from other industries. From the pioneering work of Follett (1925, 1927, 1933, 1949) on noncoercive power structures and participatory leadership to Radford's (1978) emphasis on complex decision-making processes in a "turbulent environment" (p. 677) to Drucker's (2001) seminal work on management challenges within new paradigms, management theorists have advanced the understanding that leaders must be equipped to expect a world in constant flux. More specifically, scholars have described the environment in higher education as turbulent, volatile, uncertain, complex, and ambiguous (LeBlanc, 2018; Murthy & Murthy, 2014). Given the change in the environment, Johansen (2017) stated that the development of "new leadership literacies" is crucial to innovation and financial success at a time when extreme disruption, decentralized organizations, and distributed leadership are commonplace among business and educational enterprises (p. 3). These new literacies include resilience, adaptability, flexibility, versatility, strategic agility, and ambiguity tolerance, to name a few. In particular, resilience, as it pertains to

leadership, is defined as "the capacity to rebound or bounce back from adversity, conflict, failure, or even positive events, progress and increased responsibility" (Luthans, 2002, p. 702). Further, Rossouw et al. (2017) specified that resilience "provides psychological skills and techniques to manage uncertainty and adapt faster to a changing environment" (p. 25). Thus, higher resilience levels may aid in the ability to cope with stress and thrive in an ever-changing climate (Allison, 2011; Russo et al., 2012). Resilience within academic institutions and among its middle managers is an essential attribute to strengthen, especially when stress is increased within rapidly-evolving and turbulent environments.

Causes of Stress in Higher Education Management

Although higher education is historically resistant to change, rapid innovation has become the norm (Davis, 2014; Kezar, 2017; LeBlanc, 2018), and research has indicated that stress is heightened when significant change is implemented either within an industry or an organization (Gligorovski et al., 2018; Stickle & Scott, 2016). Since the global financial crisis in 2008, most of higher education has experienced financial decline and increased competition within an ever-expanding market (Blumenstyk, 2015; Glater, 2016; Selingo, 2013; Selingo, 2016). Moreover, the general stressors of administration within higher education can be overwhelming as pressure and expectations mount from a plethora of constituents, including the board of trustees, senior administrators, faculty, staff members, students, parents, alumni, donors. Vilkinas and Cartan (2015) also illustrated the current turbulence experienced in the complex environment of academia:

> These acute environmental dynamics are in addition to the more perennial pressures, such as government demand for greater accountability for learning and research outcomes, employers wanting more 'work-ready' graduates, a more diverse student population with

> escalating consumer-oriented expectations, a rapidly emerging globally competitive tertiary education market, and the need to keep pace with technological changes in educational delivery platforms. (p. 1)

Due to these increasing demands, institutions would benefit from investing in professional development programming and training to deal with the complexity, role ambiguity, isolation, and stress experienced by the middle manager (Pepper & Giles, 2015; Preston & Floyd, 2016). However, most are faculty who have been promoted within the university; thus, mid-level training and support is not consistent among institutions of higher education, and many times the responsibilities of the mid-level manager are based on contextual factors specific to the university's structure, culture, and climate making it more difficult to streamline training and support. Hence, many higher education managers, many with training and education exclusively within their own respective disciplines, struggle with adapting to the changing climate as it transitions from a focus on a liberal arts education towards a robust business model (Blumenstyk, 2015; Christensen & Eyring, 2011; Selingo, 2013). Therefore, stress and its effects are relatively common among managers in academia.

While administrators continue to navigate these and other challenges, literature in this arena has primarily focused on stress management strategies and less on the how leaders might enhance coping, improve cognitive flexibility, and build resourcefulness when stress is heightened. The concept of resilience has been linked to well-being in several genres of scholarship (Grover et al., 2019; Halstead et al., 2018; Sutcliffe & Vogus, 2003). Additionally, resilience has been determined to be an advantageous characteristic or trait in leaders (Allison, 2011; Lawton-Smith, 2017; Luthans, 2002). Some researchers have emphasized the need to concentrate on ways administrators manage stress and build resilience while remaining adaptable

and supportive of their followers given significant demands at multiple levels (Harms et al., 2017; Leih & Teece, 2016). However, to ensure leaders are effective and successful in this period of disruptive innovation within higher education, scholarship must also consider the leader's positive coping strategies, such as building resources to enhance resilience while simultaneously addressing challenges.

Mindfulness as a Factor in Building Resilience and Reducing Stress

A distinct positive coping strategy that has garnered both mainstream attention and scholarly focus over the past decade is mindfulness. Although there are different perspectives of mindfulness and varying ways to define mindfulness, most conceptualizations lean heavily on Eastern meditative practices (Brown et al., 2007). However, Langer has developed a more Western conceptualization of mindfulness using a cognitive approach. Her theory of mindfulness posits that the mindful experience may occur through intentional novelty-seeking methods that allow for more presence in the moment (Langer & Moldoveanu, 2000). Langerian mindfulness, also known as socio-cognitive mindfulness, considers the dynamic environment in which social relationships and organizational contexts are examined and appraised. Carson and Langer (2006) also asserted, "The goal of the mindful perspective is to increase cognitive flexibility and to thereby increase behavioral flexibility and the ability to adapt to one's current environment in a meaningful manner" (p. 29). Unlike Eastern views of mindfulness, this type of mindfulness does not require significant practice or experience in meditation or breathing practices but rather brief interventions to alter the environmental, interpersonal, and cognitive perspectives (Langer, 2014). Evidence suggests that this type of mindfulness enhances empathy (Trent et al., 2016) and creativity (Bercovtiz et al., 2017), improves attentional processes (Langer, 1997), and decreases burnout (Langer et al., 1988). More recently, researchers have linked socio-cognitive

mindfulness with specific constructs related to psychological, physical, and social well-being (Pirson et al., 2018). Hence, Langer's construct of socio-cognitive mindfulness may also influence the ability to employ cognitive flexibility in a turbulent work environment and ultimately reduce stress. However, it is not clear if mindfulness directly correlates to perceived stress or whether the relationship is mediated by resilience. This hypothesized link between mindfulness, resilience, and stress is especially relevant to the development of current and emerging leaders in the turbulent environment of higher education.

Statement of the Problem

Middle managers in higher education experience increasingly high demands and significant stressors in the ever-changing landscape of higher education (Armstrong & Woloshyn, 2017; Floyd, 2016). Most research that addresses stress among academic middle managers has emphasized the need for additional professional development training and support (Pepper & Giles, 2015; Preston & Floyd, 2016). Research has provided promising evidence of the positive effects of Eastern mindfulness in reducing stress, enhancing resilience, and thus, improving job-related outcomes (Kemper & Khirallah, 2015; Lomas et al., 2017; Schussler et al., 2018).

The connection between mindfulness and stress has been supported in the literature (Baer et al., 2012; Wasylkiw et al., 2015), and Langer (2005) has theorized that socio-cognitive mindfulness influences stress. In addition, both dispositional mindfulness and resilience have been found to predict perceived stress levels (Lebares et al., 2018), and mindfulness-based interventions may also influence personal and organizational resilience (Schussler et al., 2018). Despite the recent rise in mindfulness scholarship from the Eastern perspective (Chin et al.,

2019; Montero-Marin et al., 2015; Shi et al., 2015), it is unclear whether mindfulness impacts stress directly or if the relationship between mindfulness and stress is mediated by resilience.

To date, no studies have examined Langer's (2014) view of mindfulness in relation to perceived stress and resilience. Additionally, there is no research that addresses the relationship between socio-cognitive mindfulness, perceived stress, and resilience among middle managers in higher education. Understanding these connections is critical to helping not only leaders in higher education but also their multiple constituents and the overall organization's success and stability.

Purpose of the Study

The purpose of this quantitative correlational study was to understand how socio-cognitive mindfulness predicts perceived stress among academic middle managers in higher education and whether the relationship between mindfulness and perceived stress was mediated by resilience. The population consisted of academic middle managers within U.S. institutions of higher education—department chairs, associate/assistant deans, and deans. To be eligible to participate, individuals confirmed full-time employment in a four-year private or public higher education institution located within the United States; U.S. territories were excluded. Additionally, I also excluded middle managers from other areas of higher education, such as student affairs, human resources, payroll/accounting, enrollment or advancement/development. The sample consisted of 163 respondents, which met the minimum threshold of 107, as determined by a G*power analysis to achieve a statistical power of .05. The independent variables were socio-cognitive mindfulness and resilience (mediator) and were measured by the Langer Mindfulness Scale (LMS) (Pirson et al., 2018) and the 16-item Predictive 6-Factor Resilience Scale (PR6) (Rossouw & Rossouw, 2016), respectively. The dependent variable,

perceived stress, was measured by the 10-item Perceived Stress Scale (PSS-10) (Cohen, 1994). I analyzed data based on a mediation model and used logistic and multiple regression analyses to determine how mindfulness predicts perceived stress and if resilience mediates that relationship (Baron & Kenny, 1986; Kenny, 2008).

Research Questions

This study contributes to emerging scholarship on mindfulness, particularly in relation to cognitive processes and its potential relationship to resilience and perceived stress in leadership amidst a turbulent and ever-evolving organizational environment. The research questions were the following:

Q1. How does socio-cognitive mindfulness predict perceived stress levels among academic middle managers in higher education?

$H1_0$. Socio-cognitive mindfulness does not predict perceived stress among academic middle managers in higher education at a statistically significant level.

$H1_A$. Socio-cognitive mindfulness predicts perceived stress among academic middle managers in higher education at a statistically significant level, with higher levels of socio-cognitive mindfulness predicting lower levels of perceived stress.

Q2. How does resilience mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education?

$H2_0$. Resilience does not mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education at a statistically significant level.

H2A. The relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education is mediated by resilience at a statistically significant level.

Definition of Key Terms

Academic middle managers. Administrators considered in middle management are typically identified as department chairs, assistant/associate deans, and deans in academic departments within the university structure. Previous scholarship has supported the factors and impact of stressors associated with these particular roles within higher education (Armstrong & Woloshyn, 2017; Gmelch & Burns, 1994; Gmelch et al., 1999; Wild et al., 2003; Wolverton, Gmelch, et al., 1999; Wolverton, Wolverton et al., 1999).

An academic dean is defined as being in charge of a collection of academic departments, also known as a college or school, within a university. Typical responsibilities of a dean within the U.S. higher education system include: approval of faculty hiring, facilitation of academic policies within the college, budget oversight, and resource development. An associate or assistant dean typically assists the dean with additional administrative responsibilities within the college or school. While responsibilities vary greatly among colleges and universities, this level of academic middle manager typically provides a bridge between administration and faculty, focuses on teaching and learning, navigates curricular processes, and promotes research initiatives; although as Preston and Floyd (2016) highlight, this particular role is rarely well-defined. Similarly, the role of department chair is not consistently defined in the literature (Gmelch & Burns, 1994). However, the department chair has historically been viewed as a faculty colleague who assumes the administrative duties within an academic department. Department chairs may have long-term appointments to the role or the department may cycle

through various faculty with each committing to three- to five-year terms. The role of department chair requires the person to minimize teaching, research, and other scholarship responsibilities to perform the administrative tasks required from the university so that other faculty may focus on tenure, promotion, and other research and teaching interests.

Perceived stress. Perceived stress considers the person's experience of stress as a function of objective stressful events, coping processes, personality factors, and so on (Cohen et al., 1983). This perspective differs significantly from occupational stress in which stress is operationalized by task or role-based activities. Thus, the subjective nature of the individual's perception of stressors was emphasized in this study rather than an objective manner in categorizing what specific tasks, responsibilities, or events were stressful for the person.

Resilience. Within the context of leadership, Luthans (2002) postulated that resilience is defined as "the capacity to rebound or bounce back from adversity, conflict, failure, or even positive events, progress and increased responsibility" (p. 702). Rossouw et al. (2017) further postulated that resilience "provides psychological skills and techniques to manage uncertainty and adapt faster to a changing environment" (p. 25).

Socio-cognitive mindfulness (also called Langerian mindfulness). Langer defined mindfulness from a Western social psychology perspective that considered how cognitive flexibility, for example, novelty-seeking, novelty-producing, and engagement, may impact psychological, physical, and social well-being. Thus, the mindful experience is "drawing novel distinctions [and] actively drawing on these distinctions keeps us situated in the present . . . when one is actively drawing novel distinctions, the whole individual is involved" (Langer & Moldoveanu, 2000, pp. 1–2).

Conclusion

As outlined above, mindfulness has been found to play a key role in addressing stress (Baer et al., 2012; Wasylkiw et al., 2015), building resources such as empathy (Trent et al., 2016), creativity (Bercovtiz et al., 2017), and improving attentional processes (Langer, 1997), among other benefits. Both mindfulness and resilience have been positively related to health and mental health outcomes including perceived stress (Lebares et al., 2018; Smith, 2018). In this study I sought to examine whether resilience might be the mediating mechanism through which mindfulness influences perceived stress levels among leaders in a turbulent work environment. By assessing the complex relationship between socio-cognitive mindfulness, resilience, and perceived stress among academic middle managers, the findings helped to explain any connections between the phenomena and clarify how socio-cognitive mindfulness could be implemented within higher education leadership development to reduce stress and build resilience.

This study provides significance to the existing organizational leadership scholarship in three ways. First, I hypothesized the connection between resilience, mindfulness, and stress, which has been not well-operationalized in previous leadership studies. Second, there are many ways higher education leaders attempt to minimize stress, including additional training and professional development in the logistics of management. However, there has been no evaluation of how socio-cognitive mindfulness and resilience interplay and as a result may reduce perceived stress. This study investigated and assessed that connection. Last, those who work in higher education administration, particularly academic middle managers, may find this study useful as it provides additional insight on how to address perceived stress in a turbulent, ever-changing environment.

Chapter 2: Literature Review

My purpose in this study was to examine how socio-cognitive mindfulness predicts perceived stress among middle managers in higher education, and whether the relationship was mediated by resilience. The following literature review includes research on perceived stress, resilience, and socio-cognitive mindfulness while considering the context of higher education and academic middle-management. This review of the literature addresses the changing landscape of higher education and specific management issues that exacerbate stress specific to the academic realm while recognizing that similar, yet distinct, struggles may also occur within other segments, such as student life, admissions, enrollment, and finances of colleges and universities. The studies selected for this literature review emphasize prior research on stress in higher education middle-management, although most research on stress in higher education focuses on faculty.

Additionally, Lazarus's (1966) theoretical framework on stress coping and appraisal is presented. Then the concept of perceived stress, effects related to perceived stress, and perceived stress in the context of leadership are addressed. The literature defines resilience from various perspectives, and the outcomes for resilience, in particular its connection to leadership and its relationship to stress in the literature are also examined. Finally, I explored Langer's (2014) conceptualization of socio-cognitive mindfulness and its' associated outcomes.

In order to obtain sources for this literature review, I included only peer-reviewed articles and published texts. The Abilene Christian University's (ACU's) Brown Library Research Database, the EBSCO search engine, and the Proquest Digital Dissertation and Theses Global Database were used. I searched the following terms in various combinations: *middle-management, leadership or management, higher education, stress, perceived stress, resilience,*

mindfulness socio-cognitive mindfulness, and *Langerian mindfulness*, and authors Ellen Langer and Sheldon Cohen. Specific journal searches included these journals: *Leadership Quarterly, Mindfulness, Journal of Higher Education, Journal of Management Development, Journal of Occupational Health Psychology*, and *Work & Stress.*

I reviewed over 400 articles and publications for relevance to the topic. To ensure the most accurate information was included in the final dissertation publication, I conducted frequent database searches and added and updated relevant articles and other sources accordingly.

Changing Landscape of Higher Education

Over the past 30 years, the organizational structure and culture within higher education have shifted at a staggering rate due to multiple causes; however, the rate has been more drastic within the past decade (Blumenstyk, 2015; Kezar, 2017; Selingo, 2013). Causes for the shift can be summarized by a complex system of increasing government and other external stakeholder accountability, an elevating prominence toward market-driven forces, and evolving expectations within academia leading to heightened role ambiguity and conflict. Those in middle management experience the consequences and effects of this shift with intensity as change and rapid innovation continue to unfold (Kezar, 2017; Selingo, 2016).

Government and External Stakeholder Accountability

Scholars have thoroughly documented the critical elements that are in constant flux and may exacerbate stress within higher education. In particular, increased government and other stakeholder accountability measures have caused confusion, ambiguity, and conflict (Blumenstyk, 2015; Christensen & Eyring, 2011; Eckel & King, 2004; Thelin, 2011). The U.S. higher education system has many strengths and several weaknesses to consider when compared with other countries. One particular strength involves the “ideals of limited government and

freedom of expression" (Eckel & King, 2004, p. iii). More specifically, the system allows accrediting bodies or professional associations to define professional programs and academic disciplines rather than the federal government. State legislative bodies ultimately determine the degree to which financial responsibility falls on the consumer of education, namely students and their families. Simultaneously, state and federal governments have incrementally cut funding while increasing expectations of outcomes to include reduction of student debt and evidence of employability for college graduates over the past 20 years. Meanwhile, universities have struggled to provide clear cost-benefit analyses on the value of a degree in today's society. This transition was further exacerbated by the 2008 economic crisis in which affording a college degree became more difficult for families (Blumenstyk, 2015; Selingo, 2016); thus, enrollment numbers have become the pinnacle of stability and success within any academic institution (Eckel & King, 2004; Thelin, 2011).

With government assuming less control and less fiscal responsibility, the U.S. higher education system has increasingly progressed to a model in which the marketplace guides quality, and many university administrators and boards have shifted strategies in an attempt to govern within a more conservative business model (Christensen & Eyring, 2011; Eckel & King, 2004). The transition into this new, more turbulent environment has thrust faculty and administrators into a highly competitive and unpredictable market (Pincus et al., 2017). Thus, the previously assumed advantages of academia, such as flexibility and academic freedom, are outweighed by decreasing salaries, fewer tenured positions, and increasing expectations for external funding via research grants and federal contracts (Gillespie et al., 2001). As the percentage of nonteaching workloads escalate, the student-to-teacher ratios have also increased as universities push for higher enrollment numbers to meet budget demands (Gillespie et al.,

2001). Rosser (2004) argued that academic middle managers hold a critical role in improving not only enrollment numbers but also the overall financial health and accountability practices specifically within the major service areas of higher education—academic support, business/administration, external affairs, and student affairs. In summary, the combination of less government support but more external accountability has propelled all academics, but especially middle managers, into a more complex environment in which stressors are exacerbated within the evolving milieu of higher education.

Market-Driven Forces

Kezar (2017) summarized market forces to include "the massification of higher education, enrollment fluctuations, dwindling resources, corporatization, technological advances, and competition from the for-profit sector" (p. 1). Additionally, Shin and Jung (2014) reported that the United States' education system, in comparison to others in the world, may be considered the most competitive in terms of market-driven outcomes. Due to the more recent focus on market demand in a global economy, most academic positions are now regarded as "increasingly insecure, more accountable, more entrepreneurial, and less well-paid while also losing autonomy, power, and social reputation" (Locke et al., 2011, as cited by Shin & Jung, 2014, p. 617). Shin and Jung (2014) elaborated on the social and cultural impact of this shift within academia:

> The market-oriented managerial reforms mean that academics . . . are experiencing declining job security, and lower salaries compared to other professional jobs . . . the academic profession plays a critical role in the knowledge society; however, paradoxically their social status is simultaneously being devalued by financial constraints and pressure for accountability. (p. 617)

In sum, the causes for rapid change and innovation highlighted above have subsequently led to changes in the expectations of not only faculty but also middle managers, particularly within the academic structure of higher education.

Evolving Expectations in Academic Positions

Fisher (1994) predicted that society's image of the tenured professor conducting high-level scholarship in an isolated ivory tower was quickly fading. Scholars have since estimated that between 40% and 45% of all faculty in U.S. institutions are categorized as adjuncts with short-term contracts (Bettinger & Long, 2010; Clark et al., 2011). More recent reports indicate that approximately 70% of faculty in U.S. institutions of higher education are either full-time nontenure track or part-time adjunct positions (Kezar, 2017; Murray, 2019). With tenure-track positions on the decline, many academics experience an increase in stress due to less stable employment, a decrease in autonomy and control, and ongoing concerns for freedom of expression, which had previously been highly valued and respected within the culture of higher education (Fisher, 1994; Shin & Jung, 2014).

With drastic cultural and societal changes based on market-driven forces, the entire administrative structure, and subsequently, the role of the middle manager in academia has shifted as well (Armstrong & Woloshyn, 2017). For example, deans and department chairs have long been viewed as exemplary scholars in their respective fields, but more recently, higher-level administrators expect academic middle managers to abide "by an executive image . . . as politically astute and economically savvy" (Gmelch et al., 1999, p. 718). Hence, the paradigm shift of the academic manager has caused a source of stress since many were trained as content experts in their particular profession or discipline but are now expected to function in an executive management role with little training or support (Floyd, 2016; Rosser, 2004). Scholars

have examined the middle manager's experience of role ambiguity, tension, identity confusion, and overwhelming workloads with fewer financial and personnel resources (George & Coudret, 1986; Preston & Floyd, 2016; Wolverton, Wolverton, et al., 1999). Additionally, research shows that staff and faculty within the realm of academia are also experiencing stress at higher levels than previously identified (Gillespie et al., 2001; Michailidis & Asimenos, 2002; Shin & Jung, 2014). Middle managers directly supervising staff and faculty must manage their stress if they are to effectively reduce stress for their subordinates. Each of these occupational stressors compounds as the culture of higher education continues to evolve.

Leader Stress in Academia

Academic middle managers experience the increasing pressure and tension of the transformation related to changes in external accountability, market-driven forces, and evolving expectations in academia. This population is especially susceptible to stress resulting from a decrease in resources amidst organizational constraints and the complexity of dual roles as both faculty and administrator (Armstrong & Woloshyn, 2017; Gmelch & Burns, 1994; Vilkinas & Cartan, 2015; Wild et al., 2003).

Research on stress among academic leaders has mostly focused on identifying and reducing task-based responsibilities (Gillespie et al., 2001; Gmelch et al., 1999; Wolverton, Wolverton, et al., 1999). Despite the fact that researchers have long asserted that objective stress, such as measures of specific task-based or role-based stressors or critical life events, are not effective in operationalizing stress (Cohen et al., 1983; Cohen, 1986). Most studies on academic middle managers have attempted to define particular types of occupational stressors. Additionally, many researchers have acknowledged that stress is experienced differently in the space of *middleness* (Fagin, 1997). While some scholars have attempted to quantify and justify

stress among middle managers in many contexts (Cottrell, 2001; Gligorovski et al., 2018; Stickle & Scott, 2016; Williams & Cooper, 1998), few have considered the role of academic middle management. Even fewer have examined the adverse outcomes associated with leadership stress in academia, such as turnover. As Rosser (2004) highlighted, turnover (an outcome of stress) results in higher levels of absenteeism, increased costs for training and development, and lost institutional memory. While research indicated there are numerous outcomes related to stress, this literature review evaluates research primarily from the perspective of deans, associate/assistant deans, and department chairs as middle managers.

Stress Among Academic Deans

Most studies on academic deans examine occupational stressors and context-related issues within the role. Gmelch et al. (1999) surveyed academic deans in U.S. institutions while developing the Deans' Stress Inventory as an attempt to measure levels of stress. They identified and ranked the causes of stress: (1) too many meetings, (2) excessively high expectations, (3) insufficient time to keep current in academics, (4) financial support for college programs, and (5) balance professional and personal lives. After conducting a factor analysis, the top two categories dealt with *administrative task stress*, such as the pressures of daily responsibilities like deadlines and meetings, and the *provost/supervisor-related stress* that incurs when trying to resolve conflicting demands made by administration with the knowledge that they have insufficient authority or power to make certain decisions within the university. The third-ranked category involved *faculty/chair-related stress*, which highlights the frequent conflict and personnel issues that occur among faculty and department chairs, especially in terms of tenure and promotion decisions. *Time/personal stress* ranked fourth and is defined as a "dimension [of stress that] is more holistic of demands felt from external after-hour activities from social

obligations, travel, and competition for time between the deans' personal and professional lives" (Gmelch et al., 1999, p. 731). The authors emphasized that prior occupational stress studies on administrators have not considered this dimension of stress. Interestingly, stress related to scholarship, salary/recognition, and fundraising ranked in order as the last categories of stress among deans. Despite the lower-ranked fundraising stressor, the authors noted that "the ever-expanding role of the academic dean is reflected" in this new stress factor (Gmelch et al., 1999, p. 735) which is an interesting observation made 20 years ago on the cusp of the beginning of budget cuts and financial instability within higher education institutions.

Another study similar in nature concurred that the day-to-day operations of being an academic middle manager can be overwhelming and unpredictable given that most deans are hired primarily based on their scholarly work with less consideration for management or leadership experience (Gillespie et al., 2001). The researchers qualitatively evaluated work stressors among academic staff, and concluded that "a third of all groups reported that mangers were not adequately trained in leadership, managerial, human resources and communication skills, and believed that mangers were selected on the basis of scholarly aptitude, as opposed to their ability to manage people and budgets" (Gillespie et al., 2001, p. 64). Similar to the Gmelch et al. (1999) study, there was consensus among participants that a lack of communication and clear processes for how administrative decisions were made contributed as major causes of work-related stress.

Conflicting perceptions of the dean's role and a lack of skills in communicating expectations can create confusion and subsequently increased stress within faculty, department chairs, and the dean. Role conflict and ambiguity can be common in middle-management,

especially within an academic dean position. Wolverton, Wolverton, et al. (1999) outlined the complexity of conflicting and ambiguous roles:

> As a dean within a university, he or she holds legitimate authority, but within his or her college such direct power can rarely be exercised. Here, the dean functions as a disciplinary expert, who happens to be carrying out administrative tasks, among other disciplinary experts. From the university's perspective, the more direct and decisive the dean acts, the more effective he or she is. From the college's perspective, such direct use of power is liable to bring him or her down. (p. 81)

Role conflict and role ambiguity have been extensively researched within many professions. Most have found negative outcomes for middle management positions, such as stress, job satisfaction, leadership effectiveness, and organizational commitment (Glick et al., 1986; Liu et al., 2005; Wolverton, Wolverton, et al., 1999). Aside from recommendations for additional training in management practices of leadership perspectives, few researchers have fully considered strategies needed to build resilience, reduce stress, and navigate role conflict and ambiguity from an interpersonal and intrapersonal perspective. While many researchers have attempted to profile effective leaders via certain personal characteristics and their relationship to stress or resilience (Zaccaro et al., 2018), the multidimensional nature of stress impacts the ability to quantify how certain leaders successfully mitigate role conflict and ambiguity (Bowling et al., 2017).

Contextual factors within the university system also impact leader stress. Wild et al. (2003) surveyed community college deans using the Deans Stress Inventory and found similar factors related to the deans of four-year universities; however, the ranking of those factors differed significantly. For example, they found that while identity as an administrator ranked

similarly among all deans surveyed, community college deans ranked fiscal responsibility and external constituency demands much higher than deans within four-year institutions. Thus, operationalizing stress based on task responsibilities may not fully encompass the context and organizational structure of the institution.

To clarify, there are many factors that impact stress in any leadership role, including the interplay between personal and institutional influences. Within much of the literature, stress is defined in terms of role conflict or role ambiguity; however, assumptions should not be inferred that those who experience less role ambiguity experience less stress. There can be a multitude of contextual factors and personality influences that impact one's reaction to occupational stressors. In relation to personal influences, Wolverton, Wolverton, et al. (1999) found that deans of color experienced less role ambiguity than their white counterparts. However, having children in the home (whether married or single) significantly impacted the experience of role ambiguity. Not surprisingly, deans under the age of 50 experienced more role ambiguity. However, neither gender nor marital status impacted role ambiguity. Specific institutional influences that impacted role conflict and role ambiguity occurred more in comprehensive universities in which a tension between research and teaching is more apparent. Additionally, deans within health-related professions experienced less conflict and ambiguity due to the structured nature of secondary accreditation and professional association expectations of the discipline. Again, the connections between role ambiguity and conflict as a stressor rather than the experience of stress itself are unclear in many of the studies on academic occupational stress. Clear expectations, structured preparation, and additional training and mentoring can significantly aid in guiding a dean along a successful path (Wolverton, Wolverton, et al., 1999). However, the literature could benefit from

further exploration in strategies for decreasing stress and increasing resilience aside from certain demographics and involvement in management training.

Stress Among Associate/Assistant Deans

The role of associate or assistant dean within academia is regarded as the least understood position in middle-management (Preston & Floyd, 2016). Few research studies have evaluated the barriers or stressors associated with this particular management position (Floyd & Preston, 2018; Pepper & Giles, 2015; Preston & Floyd, 2016; White, 2014). However, researchers regard the *middleness* of this middle-management role as a critical model for distributed leadership in organizational planning and decision making. For example, George and Coudret (1986) attested to the lack of understanding around role expectations that may lead to role ambiguity, overload, and conflict; thus, role dilemmas may be frequently presented as stressors in this sector of leadership. Preston and Floyd (2016) reiterated that the associate dean role is not only "difficult and complex . . . but it is operating in a very context-specific setting . . . where change has been rapid and complex" (pp. 275–276).

While no studies have directly examined stressors in the role of associate dean, White (2014) contested that high levels of role ambiguity exacerbate stress particularly among this level of middle-management. This qualitative study found that, in particular, the transition into the role was categorized as difficult, overwhelming, and stressful, and administration was not a long-term goal for most participants (White, 2014). Additionally, his results suggested that associate deans experience a significant amount of tension and role conflict around managing multiple identities as one shifts into higher-level administration. Pepper and Giles (2015) reported similar findings with the addition of feelings of isolation and "the strong sense of huge responsibility with little power" (p. 49). Therefore, the limited literature on associate deans imply that, based on the

inherent complexity, vagueness, and isolation of the role, similar stressors to deans and department chairs, such as role ambiguity, overload, and role conflict, may be exhibited.

Stress Among Department Chairs

Department chairs account for the largest administrative leadership branch within higher education (Normore & Brooks, 2014; Wolverton et al., 2005). Similar to the path of the dean, the selection criteria of the department chair are more likely based in rigorous scholarship experience and level of respect within the discipline rather than managerial or interpersonal skill. Thus, the role of department chair is naturally entrenched with structural conflict (Wei, 2018), which may enhance stress and role ambiguity. As Gmelch and Burns (1994) asserted, "The role of chair is often poorly defined, and conflicting expectations are common in terms of what deans, faculty members and chairs themselves expect the functions of chair to include . . . [thus] one of the conclusions that can be drawn from [studies] about the chair is that the role is not only pluralistic, in terms of dual roles and objectives, but is also fractionated in terms of task behaviors" (p. 80). In summary, each department, depending on the discipline, crafts the expectations of the chair in different ways. While deans tend to have similar tasks and expectations, department chairs are much more fluid in the roles in which they assume, and at times, may be impacted by the culture of the faculty and department in which they serve. Gmelch and Burns (1994) also proposed that since "academics are not a homogenous group of professionals . . . it would be inappropriate to examine chair stress without regard to the chair's professional and personal characteristics" (p. 81). Therefore, quantifying and defining specific stressors experienced by department chairs has been difficult to determine in empirical studies.

Utilizing McGrath's four states of stress—identification of stressor, individual's perception, individual's stress response, and consequences—Gmelch and Burns (1994)

developed the Chair Stress Index (CSI) by combining factors related to the previously established Administrative Stress Index (Gmelch & Swent, 1984; Rasch et al., 1986) and Faculty Stress Index (Gmelch et al., 1986). They found that age was not a significant factor in chair-related stress. The authors hypothesize that this may be due to the shorter amount of time most department chairs remain within the role or that stress may be mediated more by years of experience in the role rather than age. Additionally, there were no differences in stress among chairs when comparing gender, different disciplines (with the expectation of professional identity), or the chair's preference towards identifying as faculty or administrator. Thus, stress may manifest similarly among chairs regardless of the discipline they represent. Interestingly, the most stressful component of the chair position involves the conflict-mediating role, which represents the pressures and tension of facilitating faculty and supervisory conflict and student problems. Several studies (Acker, 2012; Block, 2014; Floyd, 2012; Smith et al., 2012) have also reported elevated stress levels among department chairs "due to bureaucratic uncertainty, workload demands, conflict with colleagues, research expectations, and organizational politics" (Armstrong & Woloshyn, 2017, p. 99).

More recently, Armstrong and Woloshyn (2017) conducted a qualitative study to explore the tensions and ambiguities of dual roles, such as manager and scholar, among Canadian department chairs. They found three major themes within the research: managing position, managing people, and managing self. When managing position, respondents discussed their attempts to balance workload with the tensions of accessibility and visibility within the department. In managing people, chairs outlined the level of communication and support required to navigate the human resources perspective of management. Finally, when managing self, they described the tension of balancing ethical decisions, considering the individual and

collective voice of the department, and maintaining dual identities as researchers/scholars and administrators. Consequently, the researchers also point out that this level of academic management typically received the least preparation and training for the role than any other leadership position (Aziz et al., 2005; Normore & Brooks, 2014). This concern is especially important to consider given the paradigm shift occurring in higher education to a more competitive climate in which "pressures to adopt top-down, managerial approaches that contradict democratic ideals" typically associated with academia are pervasive in today's university culture (Armstrong & Woloshyn, 2017, p. 109).

Summary of Findings

In summary, within each role of academic middle-management, certain occupational stressors appear to be more prevalent. However, the rate of prevalence depends on the level of role as dean, associate/assistant dean, or department chair and the contextual factors of the university, such as community college, comprehensive university, or other. While deans and associate/assistant deans tend to report experiencing role ambiguity and a lack of power as major stressors (Preston & Floyd, 2016; Wild et al., 2003; White 2014), studies on department chairs highlight the inherent tension in the day-to-day managing of conflicts between faculty, staff, and students as an ongoing stressor (Armstrong & Woloshyn, 2017; Gmelch & Burns, 1994). However, common themes are observed among all levels of middle-management, and those stressors include role ambiguity, role overload, and role conflict. Recent research indicates that the current turbulence in higher education exacerbates these stressors (Armstrong & Woloshyn, 2017; Floyd, 2016; Vilkinas & Cartan, 2015). On the other hand, the personal factors, especially a leader's own ability to manage stress, influence coping strategies and current levels of resiliency when appraising a stressor. Therefore, one may argue that it is the perception of stress,

rather than the stressful events or tasks themselves, that cause increased stressors—role ambiguity, overload, and conflict.

Conceptualizations of Stress

Throughout the evolution of stress research, the conceptualizations of the broad term may be categorized into three approaches: the engineering approach, the physiological approach, and the psychological approach (Cox & Griffiths, 2001, as cited in Gligorovski et al., 2018). The engineering approach of stress attempted to quantify the stimulus or stressor. An example of this type of approach unfolded in Holmes and Rahe's (1967) well-established tool of social readjustment based on stressful life events. Most research using this stress measure showed high rates of certain life events deemed stressful also predicted illness and other health-related outcomes (Noone, 2017). Within the workplace, other researchers have attempted to measure occupational stress based on the assumption that certain tasks, roles, or experiences propagated stress within individuals in the same manner (Cooper et al., 1988; Williams & Cooper, 1998). The second conceptualization, the physiological approach considered the biological and physiological states in which change occurs due to the stressor or reaction. Selye's (1955) work on the stress response provided a clear example of this approach. He defined stress in terms of "any demand on the body" (Selye, 1993, p. 7) and explored how certain hormones released in the brain may be viewed as a biomarker for coping. He also coined the term *general adaptation syndrome* to explain the mental and somatic energy required to adapt to stress (Selye, 1977; Selye, 1993).

Finally, the psychological approach examined the multidimensional and complex process of an individual's appraisal, coping, and subsequent interaction within the environment. Lazarus's (1966, 1977) theory on the complex nature of stress emphasized the individual's

perception of stress based on the "mediating effects of appraisal and coping in the stress process" (Lazarus, 1993, p. 23). Thus, while Selye (1977) defined types of stress as eustress or good stress and distress or bad stress (Szabo et al., 2012), Lazarus (1993) further explored how the individual appraises and assigns meaning to the type of stress they experienced via the coping process.

More recently, researchers have connected the biological changes in neuroscience research to the psychological approach of stress appraisal and coping and emphasized the connection between mindset and meaning reframing within the conceptualization of physiological and psychological stress (Dweck, 2016; McGonigal, 2015; Schussler et. al, 2018). Olpin and Hesson (2013) also reinforced the integrative nature of stress and defined stress as "a demand made upon the adaptive capacities of the mind and body" (as cited in Stickle & Scott, 2016, p. 27). Thus, this literature review primarily addresses the psychological approach to stress based on Lazarus's framework while considering how more recent research on meaning-making and mindset relate to mindfulness and ultimately influence perceptions on resilience, particularly among leaders.

Lazarus's Theoretical Framework on Stress Appraisal and Coping

Lazarus's (1966, 1977) seminal work on stress appraisal and coping provided the theoretical basis for the individual's perception of stress. In basic terms, Lazarus acknowledged that the one's interaction with the environment, the meaning assigned to the appraisal as harm/loss, threat, or challenge, and subsequently, the ability to adapt and cope based on the appraisal emphasizes the cognitive nature of the theory (Cohen et al., 1983; Folkman et al., 1986). Breznitz and Goldberger (1993) summarized the two primary components with the stress appraisal framework as the following:

> *Cognitive appraisal* plays a major role in the transaction between the person and the potentially stressful environment. Accordingly, researchers have sought to uncover the differential effects of a variety of cognitive styles upon the impact of stressors. Another central element in the adaptational equation relates to *coping*. After appraising the stressor, the organism will use one or more coping strategies in an attempt to adjust to the situation. (p. 3)

Based on Lazarus's (1966, 1977) stress appraisal theory, Cohen et al. (1983) further examined both environmental and psychological stressors for a more comprehensive and multidimensional view of stress called *perceived stress*. They purported "the causal 'event' [stressor] is the cognitively mediated emotional response [i.e., stress] to the objective event itself . . . this response is not based solely on the intensity or any other inherent quality of the event, but rather is dependent on personal and contextual factors" (Cohen et al., 1983, p. 386). Thus, appraisal and coping consider the person's ability to maintain some level of cognitive flexibility, reframe, and attach meaning to the perception of stress.

The authors also recognized the adaptive and state-like nature of stress that appeared to be lacking within task- or role-based measurements. This delineation between stress and the stressor provides a measurable way to assess Lazarus's theory in which appraisal and coping mediate stress (Lazarus, 1993). It also clarifies that stress is process-oriented in which the person-environment relationships and contextual factors must also be considered (Folkman et al., 1986). Schussler et al. (2018) further purported that the amount of stress is less critical to outcomes than how stress is conceptualized.

Lazarus's framework emphasized that primary and secondary appraisal are essential components to the state-like nature or process of stress (Lazarus & Cohen, 1977). *Primary*

appraisal occurs when the person assesses the stressor event and considers whether it is concerning. During *secondary appraisal*, the person evaluates whether the stressor is changeable and can be prevented, improved, or can be overcome (Folkman et al., 1986). *Coping* is then determined and defined as "the person's constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands" (Folkman et al., 1986, p. 993). Since each of these three mechanisms may vary among individuals, based on other confounding factors such as personality, experience, or skill, the ability to generalize and objectively measure the nature of stress across groups or populations remains difficult.

Perceived Stress

Cohen et al. (1983) explained the application of Lazarus's theory to their concept of perceived stress by delineating that "stressor effects are assumed to occur only when (a) the situation is appraised as threatening or otherwise demanding and (b) insufficient resources are available to cope with the situation" (p. 386). Therefore, both primary and secondary appraisal as well as coping are essential components of the process in which stress is deemed either as a stressor that is positive and challenging or negative and threatening. Additionally, coping responses impact the manner in which a person perceives the stressor. Active coping responses elicit intentional effort to adapt to the stressor by mitigating physical, psychological, or social harm; this type of coping is considered a positive method to reframe perceived control of the stressor (Cathomas et al., 2019). On the other hand, passive coping in which the individual attempts to reduce or avoid stress leads to negative effects, such as helplessness and isolation (Cathomas et al., 2019; McGonigal, 2015); thereby, life satisfaction, well-being, and happiness are reduced (McGonigal, 2015). The concept of perceived stress assumes that a cognitive

appraisal process is taking place during and after a stressor event occurs and considers the context of the stressor and the chosen coping response directly impacts the stress outcome.

Perceived Stress in Leadership

Given the research previously outlining stress among academic middle managers, it is evident that profiling certain characteristics or analyzing specific demographic variables to explain stress has provided informative, yet at times, inconclusive findings. In the literature, there is a focus on measuring task-based or role-based stress, typically considered an objective view of stress. However, Stickle and Scott (2016) asserted, "Perception is key to unraveling how individuals may train their minds and bodies to continuously deal with stressful situations" (p. 27). Additionally, Kennedy et al. (2013) envisioned a "move from skillset to mindset is associated with a different way of knowing leadership" (p. 12). Research in other professions have adopted the more subjective approach of perceived stress in an effort to evaluate the nature of stress and its' subsequent outcomes related to health and overall well-being (Cohen & Janicki-Deverts, 2012; Rupert & Dorociak, 2019).

Perceived stress, also called psychological stress, considers the person's experience of stress as a function of objective stressful events, coping processes, and contextual factors, such as person-in-environment (Cohen & Janicki-Deverts, 2012; Cohen et al., 1983). Perceived stress is defined as "the degree to which situations in life are perceived as stressful . . . [and assesses] how unpredictable, uncontrollable, and overloading" individuals perceive their lives (Cohen & Janicki-Deverts, 2012, p. 1323). This perspective differs significantly from occupational stress in which stress is operationalized by task- or role-based stressors. Thus, the subjective nature of the individual's perception of stress is emphasized rather than an objective manner of categorizing or dictating what specific tasks, responsibilities, or events are stressful for the person. McGongial

(2015) described the power of the subjective perception of stress in her simple assertion that "how you think about something can transform its effect on you" (p. 4). Hölzel et al. (2010) provided a physiological link to the subjective, psychological measure of perceived stress (as cited in Lazar, 2013) when they found decreased gray matter density in the amygdala, which is responsible for emotions, including fear, correlated with a decrease in perceived stress levels.

Certain health practices and outcomes have previously been associated with levels of perceived stress. For example, Cohen and Williamson (1998) found that respondents' higher levels of perceived stress negatively correlated to adverse health practices, such as less sleep, inconsistent nutrition, and increased alcohol consumption. Additionally, Cohen and Janicki-Deverts (2012) reported that higher levels of perceived stress have been "associated with elevated markers of biological aging (Epel et al., 2004), higher cortisol levels (Pruessner et al., 1999; Ruiz et al., 2001; van Eck & Nicholson, 1994), as well as suppressed immune function (Burns et al., 2002; Maes et al., 1999)" (p. 1321). Therefore, this type of psychological stress appears to impact the physiological manifestation of stress and disease (Cohen and Janicki-Deverts, 2012). Researchers have also found that higher levels of perceived stress were also negatively correlated with resilience (Shi et al., 2015).

To establish a measurable way to assess stress, the Perceived Stress Scale (PSS) was developed by Cohen et al. (1983) and designed to identify the degree to which "respondents find their lives unpredictable, uncontrollable, and overloading: three issues central to the appraisal of stress" (Cohen, 1986, p. 387). The PSS gauges the psychological and physical symptoms as well as certain health behaviors associated with positive or negative strategies for coping with stress. The PSS is the most commonly used psychological measurement for assessing the perception of stress and has been primarily used in research on outcomes related to health and well-being.

Research on Perceived Stress in Leadership

Since the development of the Perceived Stress Scale (PSS), many studies, particularly related to health outcomes, have used the conceptualization of perceived stress to predict adverse coping strategies or inadequate resources for coping (Allott et al. 2015; Lindfelt et al., 2018; Tollefson et al., 2018). Interestingly, there are few empirical studies measuring perceived stress among leaders or emerging leaders with most research conducted in the healthcare professions (Lebares et al., 2017; Shi et al., 2015; Wasylkiw et al., 2015). However, even fewer have addressed the concept within middle-management (Waszkowska et al., 2017). The following studies addressed perceived stress, as measured by the PSS, with important outcomes related to leadership in business, health or mental health, and emerging leadership of medical students or surgical residents in the high-stress industry of healthcare.

As noted, a few studies have examined perceived stress levels when considering the influence on leaders; two variables in particular have been leadership effectiveness and person-organization fit. For example, Waszkowska et al. (2017) surveyed perceived stress levels among managers in Poland and found that an effort-reward imbalance partially mediated the inverse relationship between perceived stress and person-organization fit, defined as congruence with one's values and goals within the organization. Additionally, Wasylkiw et al. (2015) examined the extent to which a mindfulness awareness practice (MAP) retreat with mid-level healthcare managers in Canada influenced perceived stress and leadership effectiveness. When compared with the control group, managers who participated in the mindfulness retreat reported decreased perceived stress scores postintervention and in an eight-week follow-up. Participants' subordinates were also surveyed and noted an improvement in leadership effectiveness post intervention. Both studies provide implications that personal attributes impact perceived stress

levels. Namely, the managers' ability to improve mindfulness (Wasylkiw et al., 2015) or navigate person-organizational fit (Waszkowska et al., 2017) influenced the perceptions of subordinates and the interpretation of organizational structure particularly when constraints are evident.

Leadership studies have also investigated the link between perceived stress and resilience or well-being and the effects on outcomes such as life satisfaction and burnout. Rupert and Dorociak (2019) surveyed licensed psychologists in the United States to assess self-care factors, such as professional support, professional development, life balance, cognitive awareness, and daily balance, and perceived stress, life satisfaction, and burnout. Using perceived stress as the mediating variable, the researchers reported full mediation between all self-care factors and outcomes; they also confirmed that all five self-care factors were significant predictors of low levels of perceived stress. Similarly, Shi et al. (2015) evaluated the relationship between perceived stress and life satisfaction among Chinese medical students and identified resilience as a mediator. The results indicated that perceived stress negatively correlated with resilience and life satisfaction. After conducting hierarchical linear regression analyses, they also found that resilience partially mediated the relationship between perceived stress and life satisfaction.

In a study that addressed dispositional mindfulness, resilience and perceived stress, Lebares et al. (2018) studied surgical residents within the United States and examined mindfulness and resilience and their association with burnout, perceived stress, and distress from anxiety, depression, suicidal ideation, or alcohol use. Results indicated that those who scored higher on dispositional mindfulness and trait resilience were negatively associated with perceived stress, burnout, and distress symptoms. The findings were that perceived stress and

health and mental health outcomes are partially linked and that mindfulness interventions may enhance the ability to build resilience.

Summary of Findings

In summary, prior research on the connections between perceived stress and burnout and resilience seemed to be the most common theme within the literature. Although there is a vast amount of literature on perceived stress and health outcomes, fewer studies have considered the potential relationship between this type of stress and leadership or management outcomes in an evolving organizational climate. The most studied industry in relation to perceived stress has occurred in healthcare.

To date, no study has evaluated the PSS among leaders within higher education. As Matthieu and Ivanoff (2006) argued, "Stress has become a common denominator in our fast-paced, complex society. Work stress, family stress, financial stress, chronic stress, and for some, posttraumatic stress are no longer isolated experiences but common refrains shared by people from varied backgrounds and in differing social circumstances" (p. 337). Therefore, it is important to explore not only the sources of stress among academic managers but also the complex, contextual, and holistic nature of stress that cannot be fully captured by measuring occupational, task-based or role-based stress previously explored among leaders.

Stress Outcomes in Leadership

The three general approaches to examining stress—engineering, physiological, psychological—have been observed throughout literature on stress and its connections to leadership. Despite the varying approaches to operationalize stress, there is an abundance of organizational scholarship on the impacts and outcomes of occupational stress and its connection to the role of the leader. Much of the research on stress and leadership link leader stress and its

direct influence on leader behavior, which subsequently impacts leader-follower relationships; when adverse or negative effects occur within such relationships, higher levels of stress and burnout in followers are evident (Harms et al., 2017) as well as a decrease in employee well-being and reduced performance (Inceoglu et al., 2018). Some scholars attest that a leader's ability to handle stress significantly impacts the type of leadership style, positive or negative, she demonstrates and whether or not her followers also experience more or less stress (Harms et al., 2017; Inceoglu et al., 2018; Nangia Sharma & Pearsall, 2016). Additionally, literature on leadership and stress documents the adverse outcomes related to high levels of chronic stress that impact both leaders' and followers' health and mental health outcomes as well as productivity levels, job strain, and ultimately the organizational climate (Jimenez et al., 2017; Montano et al., 2017; Schmidt et al., 2018).

Causes for stress in leadership are also addressed in the literature. Much of the organizational scholarship recognizes role ambiguity, role conflict, and role overload as significant role stressors among leaders (Bowling et al., 2017; Stickle & Scott, 2016). Additionally, significant shifts in innovation, technology expectations, and fiscal accountability have created added stressors to the role of manager (Gligorovski et al., 2018; Stickle & Scott, 2016; Williams & Cooper, 1998). As previously discussed, researchers produce consistent findings that when leaders experience significant change in their organization, stress levels increase (Gligorovski et al., 2018; Stickle & Scott, 2016). Leaders in higher education, particularly middle managers, experience significant stress that may negatively influence many aspects of their personal and professional lives, including health and mental health issues, job dissatisfaction, burnout, role conflict, and role overload (Michailidis & Asimenos, 2002; Shin & Jung, 2014; Stickle & Scott, 2016). The adverse outcomes of stress impact both the organization,

in terms of productivity loss and increased turnover, but also at extreme levels, the employee's mortality and morbidity (Schulte et al., 2017). A wealth of scholarship on organizational leadership provide evidence of the importance of and need for evaluating stress in leaders. Most scholars agree that balance is key in emotional regulation, and certain characteristics, such as openness to new experiences and conscientiousness, are critical to effective leadership (Zaccaro et al., 2018).

However, few studies have addressed methods for cultivating positive coping, such as resilience, that may buffer stress experienced in leadership (Roche et al., 2014). Additionally, few researchers consider a more holistic nature of leadership, including the integration of complex interpersonal skills, strong decision-making abilities, and the nuanced discretion leaders must exhibit during times of transformation and innovation in which stress may be heightened. Hence, examining ways to reduce stress for managers is essential to the health and well-being of the leaders, followers/subordinates, and the organization.

Stress and Resilience

Throughout the literature, stress and resilience are explicably linked by researchers (Aiena et al., 2015; Fletcher & Sarkar, 2013; Shi et al., 2015) with several exploring how perceived stress influences resilience (Nakamura & Tsong, 2019; Wilks & Croom, 2008). Researchers in this genre of scholarship have justified that resilience is strongly connected to the perception of stress as well as the subsequent response that varies, even with similar stressors (Cathomas et al., 2019). Furthermore, there is a correlation between resilience and the ability to adapt during adversity based on an individualized stress response (Cathomas et al., 2019). Bartone (2006) hypothesized that hardiness, a component of resilience, buffers the stress response. Additionally, Shi et al. (2015) reported that "prior research has revealed that resilience

was negatively related to stress, and resilient individuals used positive emotions to alleviate the effects of stress and showed physiological differences in their capacity to adapt to stress" (p. 2). Based on prior studies bridging stress and resilience, one may propose that resilience acts as an antidote to stress.

Conceptualizations of Resilience

Similar to stress scholarship, resilience researchers and theorists rarely agree on a unified definition of the concept (Aiena et al., 2015; Bonanno, 2004; Damásio et al., 2011). Gulbrandsen (2016) further posited that most "of the conceptual definitions featured in the literature . . . fail to distinguish resilience from other closely related constructs, such as well-being and self-efficacy" (p. 226). Over the past 20 years of research, the concept has been interpreted as a personality trait, a process, and an outcome (Fletcher & Sarkar, 2013), leading to further confusion about how best to measure the construct. During the early stages of resilience research, many theorists focused on resilience as a personality trait (Connor & Davidson, 2003; Wagnild & Young, 1993) and identified certain protective factors one must illicit to be resilient (Rutter, 1987). The American Psychological Association (APA) defined *stress resilience* as "the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress" (Cathomas et al., 2019, p. 1). Many others have conceptualized resilience as a process using similar descriptors. Table 1 below outlines various definitions of resilience as the concept continues to evolve as a developmental process.

Table 1

Definitions of Resilience as a Developmental Process

Resilience defined	Authors
". . . a dynamic process encompassing positive adaptation within the context of significant adversity" (p. 543)	Luthar, Cicchetti, et al. (2000)
". . . as the capacity for adaptability, positive functioning, or competence following chronic stress or prolonged trauma" (p. 96)	Sutcliffe & Vogus (2003)
". . . the capacity of individuals to cope successfully with significant change, adversity or risk" (p. 213)	Lee & Cranford (2008)
". . . as an interactive influence of psychological characteristics within the context of the stress process" (p. 12)	Fletcher & Sarkar (2013)
"the ability to withstand or adaptively recover from stressors" (p. 291)	Aiena et al. (2015)
". . . refers to the capacity and dynamic process of adaptively overcoming stress and adversity while maintaining normal psychological and physical functioning" (p. 2)	Shi et al. (2015)

Fletcher and Sarkar (2013) asserted that despite a lack of consensus on the operationalization of resilience, there are typically two primary components to the concept: experience with adversity and positive adaptation; both align well with the framework also set forth by Luthar et al. (2000). While adversity has previously been defined in terms of negative life experiences (Luthar & Cicchetti, 2000), more recently, authors posited that disruptions, both positive and negative, can be viewed as adversity and subsequently solicit stress (Fletcher & Sarkar, 2013; Fergus & Zimmerman, 2005; Schussler et al., 2018). Positive adaptation has been defined as "behaviorally manifested social competence" (Luthar & Cicchetti, p. 858) that occurs as an antecedent to coping. Fletcher and Sakar (2013) clarified that "resilience influences how an event is appraised, whereas coping refers to the strategies employed following the appraisal of a stressful encounter"; thus, they conceptualized resilience as "various factors that promote personal assets and protect individuals from the negative appraisal of stress" (p. 16). Thus, when one considers stress mindfully, cognitive mechanisms, such as resilience, may positively enhance

the effects on health and mental health (Crum & Lyddy, 2014; Zautra et al., 2008) as well as perceived stress.

Others provided more strengths-based, holistic interpretations of resiliency. Richardson (2002) described resiliency theory "as the motivational force within everyone that drives them to pursue wisdom, self-actualization, and altruism and to be in harmony with a spiritual source of strength" (p. 309). Bonanno (2004) declared that "resilience reflects the ability to maintain a stable equilibrium" (p. 20) which connects to the importance of sustainability within the resilience process. Most recently, Roussow (2019) proposed a definition of resilience as "advancing despite adversity" (para. 1) in which goal-oriented growth and achievement is replaced with the more basic terminology of bouncing back; this is especially helpful when one considers the importance of adaptation in an ever-evolving environment like higher education.

Despite the lack of consensus on defining resilience, notable research has been conducted with results indicating the positive aspects of psychological resilience. Although most research on resilience considers a more clinical approach (Schussler et al., 2018) typically with an emphasis on trauma, the reviewed literature featured below focused on enhancing resilience in healthy individuals and from a leadership perspective.

Resilience Outcomes

Resiliency as a marker of well-being has typically been defined in terms of coping mechanisms utilized to adapt to challenges and persevere obstacles or hardships. Research on resilience has provided an abundance of the desired outcomes associated with the concept. Wagnild (2009) found resilience was positively related to morale, life satisfaction, and psychological well-being, while negatively correlated with depression. Others have purported that resilience is linked to several positive outcomes related to physical health, emotional health,

and positive emotions (Aiena et al., 2015; Shi et al., 2015). Christman and McClellan (2012) summarized the literature by explaining that "most scholars view resilience as something that permits individuals to develop patience, tolerance, responsibility, compassion, determination, and risk-taking" (p. 650). These proposed outcomes of resilience would require leaders to practice higher levels of self-awareness, self-reflection, and self-regulation and adjust behavior and cognitive patterns or mindsets accordingly and as stressors fluctuate (Cseh et al., 2013; Heslin & Keating, 2016; Yeager & Dweck, 2012).

In relation to occupational stress, Stickle and Scott (2016) asserted that a leader's ability to be resilient impacted others' levels of resiliency. Cathomas et al. (2019) highlighted that strong social support and certain positive inherent characteristics predicted higher resilience levels. Additionally, researchers examined whether resilience predicted "openness to organizational change and measured resilience as a composite of self-esteem, optimism and perceived control" (Wanberg & Banas, 2000, as cited in Lawton-Smith, 2017, p. 9). Interestingly, cognitive flexibility, sociability, and active coping, among other factors, have also been associated with resilience (Skodol, 2010; Kent & Davis, 2010). Thus, there is a clear case for further examination into the relationship between resilience, socio-cognitive mindfulness, and perceived stress among leaders.

Research on Resilience in Leadership

Several studies linking stress to resilience have been previously identified in this literature review (Aiena et al., 2015; Fletcher & Sarkar, 2013; Shi et al., 2015). Yet, there are very few empirical studies that have examined resilience among leaders or emerging leaders, with most focusing on organizational resilience in the midst of crisis or organizational adversity (Kahn et al., 2018; Sutcliffe & Vogus, 2003). Interestingly, Roche et al. (2014) proposed that,

since resilience and mindfulness have been linked to positive emotions, they may "interact with each other, showing these constructs can play an important role together" (p. 479). Given research that positive emotions buffer stress, it may be that mindfulness may work to reduce stress by building positive emotions through resilience. However, no studies to date have addressed resilience as a mediator among academic middle managers within higher education nor whether it explains the relationship between mindfulness and stress. The following studies addressed resilience and its link to important outcomes related to leadership in higher education.

Utilizing constructivist grounded theory, Lawton-Smith (2017) conducted a qualitative study interviewing leaders who completed a coaching program. The purpose of the study was to conceptualize resilience as a way to inform future coaching interventions. The findings indicated three major themes when considering resilient leadership: (1) resilience seemed to encapsulate more than recovering from adversity but rather moving forward with the "right mindset" and flexibility (Lawton-Smith, 2017, p. 13), (2) resilience was viewed as a metaphorical energy or fuel source that can be exhausted, and (3) resilience was influenced by the leader's personal values. For example, when asked when resilience failed for them, participants discussed when values were compromised. The researcher concluded that resilience is not purely about skills and strategies but also about an ongoing process in which resources—energy, values, and flexibility—and the strategies to employ those resources may be endangered. Ultimately, Lawton-Smith (2017) proposed that resilience may have two essential components that include capabilities, which is the most common perspective of resilience, and capacities, something that is not generally measured in the literature.

Studies show that the development of resilience is important to leadership, since leaders and educators have a central role in influencing resilience in their environments (Mulliner,

2018). Two primary leadership capacities highlighted in the literature involve tapping into the relational/social aspects and integrating mindfulness techniques within the organizational culture and climate; both are believed to build resilience among leaders and educators. Teo et al. (2017) asserted that the success of an organization during a crisis is directly related to the resilience of its leadership and subordinates. After completing semi-structured interviews and coding analysis, the authors found that when leaders integrated strong relational components throughout the lifecycle of the crisis, such as clear communication about how structural changes were employed, formation of social networks between seasoned and new employees, intentionality about the process of making meaning and sense of out the crisis, and using mindful communication to reinforce social networks of support, team membership and organizational climate improved.

In a study that explored mindfulness and resilience in educators, Schussler et al. (2018) noted the importance of managing stress and building resilience by implementing a mindfulness-based intervention among primary education teachers in the United States. Two major themes arose from the data: sources of stress and mechanisms of change. First, the researchers found that the perception of stress and, subsequently, the ability to regulate emotions, greatly influenced the teachers' experience of managing stress. Second, they found that efficacy and the ability to tolerate distress significantly influenced resilience. The findings supported the notion that mindfulness interventions may cultivate resilience and enhance collegiality in the form of social and relational support.

Both studies provide evidence that while resilience can be conceptualized in many ways, it is the environment or organizational structure that influences how organizations operationalize resilience. The literature also emphasized important personal and professional aspects linking

leadership and stress, particularly in relation to social and organizational contexts. Additionally, each focused on the essential role of the leader and educator in the ability to impact resilience at the micro-, mezzo-, and macro-levels within an organization.

The Neurobiology of Resilience

While there is no one method or definition addressing resilience in higher education leadership, emerging neuroscientific research has explored the connections between resilience and the adaptation to stress during adverse times. There has been increasing momentum in conceptualizing resilience while integrating the growing body of neuroscience research. Thus, researchers have begun to recognize that prior resilience definitions are mostly phenomenological in nature and fail to address biological components associated with coping (Lazar, 2013; Siegel, 2015).

For example, the work of Russo et al. (2012) acknowledged the connections in animal and human neurobiology work and resilience research particularly in light of the manifestation of psychological disorders in the brain; the authors defined resilience as "the capacity of an individual to avoid negative social, psychological, and biological consequences of extreme stress that would otherwise compromise their psychological or physical well-being" (Russo et al., 2012, p. 1475). Similarly, Osório et al. (2017) investigated the physiological process associated with adapting to stress to explain the neurobiological impact on resilience and proposed an interdisciplinary approach to the study of resilience in which intrapersonal (physiological) and interpersonal (psychological) factors are simultaneously examined.

Interestingly, Siegel (2015) coined the term *interpersonal neurobiology* to address the flow of energy between the brain (the mechanism) and the mind (the self-organizing and relational process) not only within individuals but also between individuals. He hypothesized

that when both are integrated, health, resilience and well-being are optimized, and when disintegrated, rigidity and/or chaos are experienced. Thus, he proposed that mindfulness may be one strategy to enhance resilience by bridging mind-body attunement in the midst of perceived chaotic or turbulent environments. Cathomas et al. (2019) have also proposed that resilience is enhanced through neurobiological components. Expanding on Richardson's (2002) concept of resiliency as *biopsychospiritual homeostasis* or adaptation and regulation within the mind, body, and spirit, their review of recent studies provided evidence that the links between the central nervous system and the immune system directly impact one's ability to thrive physically and mentally. The conclusions from these studies support the complexity of operationalizing resilience or how neurological connections ultimately influence behavior to adaptation and change.

Based on the neurobiological framework of resilience, Rossouw and Rossouw (2016) hypothesized a link between physical health, neuroplasticity, and psychological resilience. They also addressed the correlation between interpersonal and intrapersonal factors that may impact resilience. Thus, the authors proposed that "deeper integration [within a] resilience measurement could assist in moving the research beyond primarily phenomenological observations toward a mechanistic understanding of resilience capacity" (Rossouw & Rossouw, 2016, p. 32). While emerging theories are currently under development that more closely link a psychological construct of resilience to physiological and neurobiological markers for health and well-being, methods to predict, profile, or even measure resilience continue to evolve.

Rossouw and Rossouw (2016) recently developed the Predictive 6-Factor Resilience Scale (PR6) based on neurobiological research, which outlines certain interpersonal and intrapersonal protective factors needed for positive coping and, ultimately, resilience. The six

factors identified within the scale are the following: Vision, Composure, Reasoning, Tenacity, Collaboration, and Health; each seem to pinpoint a theme found in the scholarship on resilience. Vision encapsulates purpose, self-efficacy, and goal-setting. Composure addresses the ability to regulate emotions, interpret bias appropriately, and remain calm; the authors purport composure is a similar but separate construct from self-awareness. Reasoning considers the need for problem-solving, resourcefulness, and other executive functions needed to accurately strategize. Tenacity summarizes what most of the past resilience literature emphasizes, namely, perseverance and hardiness, the ability to bounce back from adversity, and a sense of realistic optimism. Collaboration describes the social context and support networks typically associated with resilient individuals. Even so, the authors also consider this domain to include social attachment, which promotes healthy neural activation within the context of strong relationships. Finally, Health proposes the physiological factors needed to function under great adversity and turbulence: regular exercise, sleep hygiene, nutrition, and perception of overall health. These domains when combined provide an innovative definition of resilience that considers much of the neuroscientific research.

The authors of the scale assert that the nature of resilience and its impact on positive or negative coping is complex and iterative such that multiple components must be considered and evaluated. Recognition of the multidimensional nature of resilience is consistent with what researchers in neurobiology and neuroscience have concluded (Cathomas et al., 2019; Osório et al., 2017). This assertion also fits well within Zaccaro et al.'s (2018) recommendation that future research should equally consider interpersonally oriented characteristics as well as organizationally focused behaviors, and many current resilience scales focus on only one or two dimensions. Although a relatively new scale, the PR6, along with the PSS-10, may provide a

more holistic and dynamic consideration of the correlations between interpersonal/intrapersonal factors and perceived stress among higher education middle managers during a time in which the neurobiological effects of resilience and perceived stress are well-documented in the literature and prevalent in an ever-evolving environment.

Summary of Findings

In conclusion, the research outlined above explored the many facets of resilience and important outcomes to consider when addressing leadership and stress. The most common themes among emerging research addressed physiological and psychological factors associated with resilience especially when stress adaptation is a focus. In general, there are emerging theories that address the neurobiological components in complex and multifaceted ways. Nevertheless, all take into consideration that, while there is no clear method for predicting or profiling resilient individuals, the need for resilience is essential in today's society in which the ability to thrive in uncertainty and cope with constant change is paramount.

Conceptualizations of Mindfulness

Mindfulness is a distinct positive coping strategy that has garnered both mainstream attention and scholarly focus over the past decade. Even so, few researchers agree on a single definition of mindfulness, and several recommend that clear conceptualization of the term is needed in future research (Brown et al., 2015; Lomas et al., 2017; Quaglia et al., 2016). The following section addresses two primary frameworks for mindfulness and discusses the similarities and differences within the research.

Brown et al. (2007) provided a historical framework for mindfulness and its similarities and differences to commonly used definitions of the term:

> The term *mindfulness* derives from the Pali language word *sati* meaning 'to remember' but as a mode of consciousness it commonly signifies presence of the mind (Bodhi, 2000; Nayaniponika, 1973) . . . the concept of mindfulness is most firmly rooted in Buddhist psychology, but it shares conceptual kinship with ideas advanced by a variety of philosophical and psychological traditions, including ancient Greek philosophy, phenomenology, existentialism, and naturalism in later Western European thought and transcendentalism and humanism in America. (p. 212)

Brown and Ryan (2003) further defined mindfulness broadly as a "quality of consciousness" that includes attention and awareness to the present (as cited in Brown et al., 2007, p. 212) with particular emphasis on attention and awareness. Considering this perspective, mindfulness has been categorized as a metacognitive skill (Bishop, 2004). However, researchers have also classified mindfulness as a method for positive reappraisal (Garland et al., 2009; Hanley & Garland, 2014) and self-regulation (Bowlin & Baer, 2012; Brown & Ryan, 2003) in which non-reactivity and acceptance are paramount. Overall, there are multiple theories and definitions for mindfulness in the literature. For the purposes of this study, I address the two most widely-cited frameworks for mindfulness: Kabat-Zinn's (2013) Eastern perspective on meditative mindfulness, and Langer's (Langer & Moldoveanu, 2000) Western social psychological perspective on socio-cognitive mindfulness.

Meditative Mindfulness

The most commonly used definition of mindfulness is a state or quality of "awareness that arises through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145). Distinct from meta-cognition or consciousness, Kabat-Zinn's operationalization emphasizes nondiscriminatory

awareness and an intentionality to the process (Brown et al., 2007). Drawing heavily from Eastern meditative practices, Kabat-Zinn (2013) created a mindfulness meditation intervention, Mindfulness-Based Stress Reduction (MBSR), which has been widely studied as a premier intervention to reduce stress (Baer et al., 2012), chronic pain (Khoo et al., 2019), and other health and mental health outcomes, such as anxiety and depression (Khoury et al., 2015). Additionally, neuroscientists have linked meditative practices to physiological brain changes related to emotional regulation and stress reduction (Gotink et al., 2016; Lazar, 2013; Hölzel et al., 2010). Kabat-Zinn (2013) asserted that the individual's attitude influences the success of meditative mindfulness practice and involves seven factors: nonjudging, patience, beginner's mind, trust, nonstriving, acceptance, and letting go. These foundational concepts address an affective style of conscious awareness in which internal mood, feelings, and emotions are examined (Bishop, 2004).

Socio-Cognitive Mindfulness

From a more Western scientific perspective, Langer developed a construct of mindfulness that encapsulated a cognitive style of well-being through the lens of social psychology (Brown & Langer, 1990; Pirson et al., 2018). Langer and Moldoveanu (2000) posited that the mindful experience occurred through intentional novelty-seeking methods that allow for more presence in the moment. Langerian mindfulness, also known as socio-cognitive mindfulness, considered the dynamic environment in which social relationships and organizational contexts are examined and appraised; thus, external stimuli are examined (Bishop, 2004) and perspective-taking is considered essential (Trent et al., 2016).

Evidence has suggested that this type of mindfulness heightens empathy (Trent et al., 2016), enhances creativity (Bercovtiz et al., 2017), improves attentional processes (Langer,

1997), and decreases burnout (Langer et al., 1988). More recently, researchers have linked socio-cognitive mindfulness with specific constructs related to psychological, physical, and social well-being (Pirson et al., 2018). This operationalization of mindfulness has been deemed a more mindset-oriented approach (Kang et al., 2014) distinctive from the meditative approach.

Although clearly distinguished as separate constructs in prior research (Bishop, 2004; Trent et al., 2016), some researchers have emphasized that the concepts are "mutually supportive . . . [and] should not be regarded as distinct components" (Brown et al., 2007, p. 213). Hence, the evaluation of both approaches may provide a more multidimensional and holistic interpretation of mindfulness. The following section compares and contrasts the nuances between the meditative (Eastern) and socio-cognitive (Western) mindfulness.

Similarities Between Eastern and Western Mindfulness

Kang et al. (2014) coined the term *mindset-oriented mindfulness* when describing Langer's conceptual framework (Langer & Moldoveanu, 2000) and suggested that *meditation-oriented mindfulness* best described the framework of Jon Kabat-Zinn (2013). The authors asserted both types of mindfulness involve attention and openness to new experiences with a "flexible level of curiosity" (Kang et al., 2014, p. 169). Additionally, acceptance of the present reality and de-automatization are acknowledged in both mindset-oriented and meditation-oriented mindfulness; deautomatization occurs when one disengages from auto-pilot and elicits presence and novelty-seeking with curiosity leading to flexibility with subjectivity (Kang et al., 2014). Lomas et al. (2017) addressed the similarities between the two when describing open-monitoring. Bishop (2004) theorized that frequent open-monitoring of consciousness may lead to "increased cognitive flexibility as reflected by an ability to generate differentiated and integrated representations of cognitive and affective experience" (p. 234). Additionally, Leary (2004)

attested that a reasonable view of reality is the marker for most psychological constructs related to well-being. Brown et al. (2007) supported Leary's claim and asserted that mindfulness leads to more appropriate psychological responses via positive reappraisal and self-regulation; subsequently, well-being is believed to be positively influenced.

In summary, there are some theoretical consistencies among the two types of mindfulness described above. Major themes from the two kinds include acceptance, openness, and curiosity. Additionally, researchers have alluded that both "undercut habitual, automatic evaluations and routines, and open possibilities for fresh, creative responses" (Alexander et al., 1989, as cited in Brown et al., 2007, p. 217). Both address consciousness via attention and awareness, and both consider flexibility and reappraisal, which may lead to the known benefits of human flourishing and, ultimately, well-being (Lomas et al., 2017; Olendzki, 2014).

Differences Between Eastern and Western Mindfulness

Despite some homogeneity between the constructs, there are several distinct, nuanced differences (Carmody, 2014; Hart et al., 2013). Again, Kang et al. (2014) delineated the differences between socio-cognitive mindfulness and the meditative mindfulness in detail:

> Mindset-oriented mindfulness focuses on creating new categories, thereby examining old concepts in a new light (Langer, 1989). On the other hand, meditation-oriented mindfulness aims at blurring pre-established categories, especially those of self versus others (Gyatso, 1986). Furthermore, tasks designed to induce mindset-oriented mindfulness involve goal-oriented cognitive problem-solving that requires consideration of information or situations from multiple perspectives to increase creativity and openness (Langer & Moldoveanu, 2000). In contrast, meditation instructions often

> include a non-goal directed and nonjudgmental observation of internal and external stimuli (Kabat-Zinn, 1990). (p. 169)

Olendzki (2014) further explained that the goal of Eastern mindfulness practice is to "neutralize the symbolic nature of the mind" (p. 72), while the Western social psychology perspective strives to improve the efficiency of attentional and awareness processes through intentional ways. Moreover, the concept of equanimity, which encompasses calm and balance as an expected outcome of mindfulness, is only addressed within meditative mindfulness (Olendzki, 2014). This difference may speak to the focus of each type of mindfulness. For example, meditation-oriented mindfulness is considered to illicit a more affective style (Lazar, 2013) focused on the individual's internal awareness, while socio-cognitive (mindset-oriented) mindfulness demonstrates a cognitive approach in which other aspects, such as organizational context, may be considered. Carson and Langer (2006) asserted, "The goal of the mindful perspective is to increase cognitive flexibility and to thereby increase behavioral flexibility and the ability to adapt to one's current environment in a meaningful manner" (p. 29). Brown (2015) supported socio-cognitive mindfulness as a method to address unregulated maladaptive behaviors. Most importantly, this type of mindfulness does not require significant experience in meditation or breathing practices (Langer, 2014), and may capture those who are resistant or critical of the primarily Eastern approach to mindfulness.

In conclusion, several differences are found between Eastern and Western concepts of mindfulness. Eastern perspectives tend to focus on the individual's affect—their mood, emotions, and feelings—related to sensory input with a primary emphasis on internal awareness; thus, research in this area supports that affective flexibility leads to self-regulation. Western viewpoints center on the cognitive framework of the mindset as a springboard for positive

reappraisal within interpersonal, social, and organizational contexts. Despite the contrasts, there is a dearth of research that addresses both types in terms of outcomes that enhance well-being, although as previously noted, some researchers propose that recognizing both may provide a more comprehensive operationalization of the construct. Specific to this research study, Langer's construct of socio-cognitive mindfulness applied more clearly via cognitive flexibility and thus, enhanced problem-solving in a turbulent work environment, and ultimately, buffered stress when mediated by resilience.

Research on Socio-Cognitive Mindfulness

Langer's socio-cognitive mindfulness defines cognitive flexibility in terms of novelty-seeking, novelty-producing, and engagement in the situation or environment (Bodner, 2000; Bodner & Langer, 2001). Langer and colleagues (Langer, 1989, 1997; Langer et al., 1978) initially discovered that awareness and presence within one's environment predicted either mindfulness or mindlessness. Langer and colleagues developed the Langer Mindfulness Scale (LMS) to assess the social psychology perspective of mindfulness (Bodner & Langer, 2001). While negative effects of mindlessness, the opposite of mindfulness, have also been studied (Langer, 2014), no research to date has considered a potential correlation between socio-cognitive mindfulness and perceived stress or resiliency. Much of the initial research conducted by Langer and colleagues occurred in field and lab experiments; more recently, the research has transferred into other types of designs including cross-sectional studies. In sum, studies over the past 15 years have produced promising results that relate to important outcomes for leaders and middle managers particularly within a turbulent environment like higher education.

Field experiments investigating socio-cognitive mindfulness have examined positive outcomes associated with the construct. Grant et al. (2004) found associations between socio-

cognitive mindfulness, higher levels of perceived competence, and self-worth. Langer et al. (2010) studied the link between social comparisons and mindlessness and purported that those who did not compare socially and were not deemed mindful had higher levels of perceived performance. Haas and Langer (2014) found that socio-cognitive mindfulness increased interpersonal synchronicity, defined as cognitive and behavioral regulation with others. More specifically, participants who received a brief mindfulness mindset intervention reported improved social and relational interactions (synchronicity and authenticity) among strangers when compared with those who did not receive the intervention. The results of these field studies suggested that important aspects of leadership, such as competence, performance, authenticity, and relational synchronicity, are impacted by brief socio-cognitive mindfulness interventions. This research also contributed to the earlier connections between mindset and perception in the literature.

Cross-sectional studies have more recently explored the potential benefits of socio-cognitive mindfulness. Trent et al. (2016) examined differences between meditative and socio-cognitive mindfulness in relation to affective and cognitive empathy and determined that socio-cognitive mindfulness predicted both types of empathy due to the cognitive flexibility involved in reappraisal, while the traditional meditative type positively correlated only with affective empathy. Pagnini et al. (2016) addressed socio-cognitive mindfulness as a protective factor among caregivers of people with chronic conditions and found that higher mindfulness scores negatively correlated to caregiver burden, anxiety, and depression and positively correlated with quality of life. Thus, resilience, which is also influenced by similar outcomes, may also be improved through socio-cognitive mindfulness. Consequently, Pagnini et al. (2016) explored the link between socio-cognitive mindfulness and perceived control when acceptance and curiosity

are applied in uncertain and unpredictable situations. The authors proposed that a lack of acceptance, curiosity, and humor, all deemed attributes of Langerian mindfulness, inhibited resilience and well-being. In sum, researchers have theorized the connections between socio-cognitive mindfulness and resilience with several outcomes related to well-being. Studies on socio-cognitive mindfulness have also supported that those who are not interested in meditation may benefit from socio-cognitive mindfulness/mindset interventions.

Interestingly, there are no studies to date that directly link socio-cognitive mindfulness to perceived stress or resilience. However as previously noted, Langer and others have theorized the relationships. In particular, Langer (2005) linked thoughts of incompetence during uncertainty to stressful thinking and proposed the "notion that successful adaptive behavior depends on the loosening of the grip that cognitive commitments have on our minds" (p. 217). Hence, she emphasized that perceiving situations or contexts as novel rather than uncertain is more beneficial to well-being. Crum and Lyddy (2014) contended a clear connection between mindfulness and stress via the mindset approach. They stated that "mindfulness can create awareness of existing stress mindsets that are guiding automatic functioning and biasing responses, and then help transform them, thereby harnessing the enhancing effects of stress" (p. 954). Thus, when one considers stress mindfully, cognitive mechanisms enhance the effects on health and mental health, performance, and well-being (Crum & Lyddy, 2014).

Socio-Cognitive Mindfulness and Leadership

Although no empirical research has been conducted to explore socio-cognitive mindfulness and leadership, Dunoon and Langer (2011; 2012) posed the relationship and provided practical strategies for dealing with complex and turbulent problems, such as being alert to multiple perspectives, actively engaging in self-appraisal, and practicing attentive

communication. They summarized mindful leadership as awareness and attention that one must balance "multiple perspectives . . . without judgment, put the quality of the interaction as a higher priority than task achievement in particular circumstances, contemplate what might be real to a reasonable stakeholder, and ask questions to learn" (Dunoon & Langer, 2011, p. 3). In summary, they attested that leadership is not binary in terms of leader versus group effort. Instead, they proposed, "Mindful leadership practice implies both individual and collective components. Our emphasis is on the in-the-moment interventions by individuals contributing to the building of shared meaning in a group about a contentious problem" (Dunoon & Langer, 2011, p. 10). This type of leadership appears to remain distinct from other de-centered leader frameworks, such as distributive, collective, or shared leadership.

Similarly, Ritchie-Dunham (2014) identified necessary socio-cognitive components of mindful leadership when experiencing the dynamics of complexity and uncertainty in today's leadership experience. He provided three separate but equal interpretations when analyzing uncertain situations or complex organizational issues, which he categorized as thinking, relating, and intention. He then linked each type to mindful leadership (Ritchie-Dunham, 2014). His expansion of mindful leadership encapsulates leaders who "recognize and embrace the uncertainty" by appraising perceived control of the situation and then assessing new aspects of the issue (Ritchie-Dunham, 2014, p. 455). Thus, leaders solicit multiple perspectives within the dynamic and evolving relationship between the leader and the system. Pagnini et al. (2016) advised that

> mindful people are more capable of responding to stressful situations without an automatic or otherwise maladaptive reaction because they are more open to new perceptual categories. The ability to continually create new schemas and recategorize

information from older schemas allows for better adaptation to new situations. (p. 108) Understanding the relationship between mindfulness in leadership is critical to helping not only leaders in higher education but also their multiple types of constituents and the overall organization's success and stability.

Summary of Findings

Scholarship on mindfulness has grown substantially in the past decade. The effectiveness of mindfulness interventions has decidedly altered the mindset of the mind-body connection in the areas of medicine (Buchholz, 2015; L'Estrange et al., 2016; Ludwig & Kabat-Zinn, 2008), behavioral health and substance abuse (Cherkin et al., 2017; Norton et al., 2015; Zgierska et al., 2019), psychology (Hopthrow et al., 2017; Niemiec et al., 2010; Querstret et al., 2017), and education (Dundas et al., 2016; Harpin et al., 2016; Luiselli et al., 2017), to name a few. Despite the surge of empirical studies about mindfulness in the past decade, consensus on the operationalization of mindfulness remains elusive. Hence, two primary frameworks were addressed in this literature review with particular focus on the socio-cognitive (Western) approach to mindfulness and the current state of recent findings.

Most studies on mindfulness have addressed the clinical setting and favored measuring maladaptive health and mental health outcomes. Conversely, few studies have explored the effects of mindfulness on healthy individuals, particularly in the workplace (Hyland et al., 2015; Lomas et al., 2017). Furthermore, only a handful have discussed the impacts on leadership, but when addressed, scholarship has concentrated mostly within the sphere of business and has addressed the Eastern perspective of meditative mindfulness (Baron, 2016; Roche et al., 2014; Verdorfer, 2016). Within this smaller segment of research, scholarship has posited that

meditative mindfulness is a protective factor in the well-being of leaders (Ashford & DeRue, 2012; Brown & Ryan, 2003; Roche et al., 2014).

As noted, some researchers have submitted that both meditative mindfulness and mindset mindfulness are critical to explore further as neither should be viewed as mutually exclusive. However, a thorough review of the literature for this study has produced no published empirical studies on the impact of either meditative or socio-cognitive mindfulness among leaders in higher education, and none have specifically considered the relationship between socio-cognitive mindfulness and stress or resilience with any population.

Conclusion

A wealth of scholarship on organizational leadership provides evidence of the importance of and need for evaluating stress in leaders and the subsequent outcomes associated with leadership stress. Higher education leaders currently navigate rapidly changing cultural and structural expectations on a national and international scale. Thus, literature suggests that stress levels may be more exacerbated in academia over the past two decades, and academic middle managers experience stress in more complex ways than faculty or staff. Prior research on stress among academic middle managers focused mostly on stressors by objectively measuring task- or role-based responsibilities. Yet, many stress researchers view the concept as complex, contextual, multi-dimensional, and subjective to the person. Therefore, perceived stress tends to provide a more comprehensive perspective of stress beyond occupational stress or stressful life events and has never been measured among middle managers in higher education.

Research supports the notion that the ability and capacity to exhibit self-awareness, cognitive flexibility, and self-regulation in relation to social and organizational contexts is critical among middle managers and valuable for managing stress and building personal and

organizational resiliency. One concept related to perceived stress and mindfulness that has been prevalent in the research is resilience. In addition, socio-cognitive mindfulness is considered a state-like mindset in which a leader's overarching thesis may be that "the essence of mindfulness is change" (Langer & Moldoveanu, 2000, p. 4), and thus, acceptance and openness to change may illicit resilience and subsequently, lower levels of perceived stress. Hence, it is important to examine the influence of this type of mindfulness and resilience on perceived stress among academic middle managers that experience pervasive change within the realm of higher education.

Researchers explored the connections between well-being and mindfulness in leadership and have reported that mindfulness is a protective factor in the well-being of leaders (Ashford & DeRue, 2012; Brown & Ryan, 2003; Roche et al., 2014). Studies on the college student population have examined links between resiliency and mindfulness and found Eastern conceptualizations of mindfulness predict resiliency and academic self-efficacy (Keye & Pidgeon, 2013), while resilience and mindfulness moderate the effects of depression and life satisfaction (Smith, 2018). Additionally, researchers have determined that certain characteristics, such as optimism, ability to tolerate uncertainty, and mindfulness, may elucidate a more positive view of stress (McGonigal, 2015). Conversely, review of the literature for this study has produced no empirical studies published on the impact of mindfulness and resilience among leaders in higher education.

Roche et al. (2014) argued that the organizations employing today's workforce should evolve into a new sphere of what it means to thrive in leadership:

> Leaders, while trying to be a source of positive energy and growth within an organization, are nevertheless realistically faced with complex, challenging, and pressure-

> packed situations. This potentially toxic environment calls for organizations to develop a greater understanding of leaders' psychological resources that can aid their positive well-being and help them fight off dysfunctional outcomes. (p. 484)

While there is significant evidence in the literature of turbulence in higher education, stress among academic middle managers, perceived stress, resilience, and socio-cognitive mindfulness, no study has explored all of these connections. Although there is evidence to support the link between mindfulness and stress, it is still unclear if mindfulness reduces stress or if the relationship is explained by resilience. This literature review provides justification for the need to explore these connections among academic middle managers in higher education. With much of these concepts continuing to emerge in leadership and organizational scholarship, this study contributes to the field of knowledge in the areas of higher education leadership, middle-management, mindfulness, resilience, and perceived stress.

Chapter 3: Research Method and Design

Middle managers in higher education experience increasingly high demands and significant stressors in the ever-changing landscape of higher education (Armstrong & Woloshyn, 2017; Floyd, 2016). Research suggests that middle managers in academia—deans, associate/assistance deans, department chairs—are especially susceptible to stress due to a lack of resources amidst organizational constraints and the complexity of dual roles as faculty and administrator (Armstrong & Woloshyn, 2017; Gmelch & Burns, 1994; Vilkinas & Cartan, 2015; Wild et al., 2003). Most research that addresses stress among academic middle managers emphasizes the need for additional professional development training and support (Pepper & Giles, 2015; Preston & Floyd, 2016). However, emerging research provides promising connections to the positive effects of mindfulness in reducing stress, positively influencing resilience and well-being, and improving job-related outcomes (Kemper & Khirallah, 2015; Lomas et al., 2017; Schussler et al., 2018).

Pirson et al. (2018) proposed socio-cognitive mindfulness as a method for increasing psychological, physical, and social well-being. Additionally, this Western social psychology lens of mindfulness considers the dynamic environment in which social relationships and organizational contexts are examined and appraised. The concept of perceived stress addresses strategies in which appraisal and coping influence a person's ability to be cognitively flexible, reframe, and attach meaning to the perception of stress. The connection between mindfulness and stress has been supported in the literature (Baer et al., 2012; Wasylkiw et al., 2015), and Langer (2005) has theorized that socio-cognitive mindfulness influences stress. In addition, both dispositional mindfulness and resilience have been found to predict perceived stress levels (Lebares et al., 2018), and mindfulness-based interventions may also influence personal and

organizational resilience (Schussler et al., 2018). Thus, the present study further examined the relationship between socio-cognitive mindfulness and perceived stress and whether the link was explained by building resilience.

The purpose of this quantitative correlational study was to examine how socio-cognitive mindfulness predicted perceived stress among academic middle managers in higher education, and whether the relationship was mediated by resilience. The independent variable, socio-cognitive mindfulness, was defined as a cognitive style of mindfulness that promotes seeking new perspectives (novelty-seeking), facilitating creative activity (novelty-producing), and engaging with the current situation and/or moment (Langer, 2014). The mediating variable, resilience, was defined as the psychological skills necessary to manage uncertainty and enhance adaptability. The dependent variable, perceived stress, was defined as the cognitive appraisal or perception of stress. This chapter provides the specific research methods and data analysis used to examine the relationship between these three variables. The initial sections describe the research design and rationale, followed by a definition of the sample population, a description of the instruments selected, and the rationale for choosing the measurements, the definitions of identified operational variables, and the methods used for data collection and analysis. The final sections address the methodological assumptions, limitations, delimitations, and ethical considerations required to ensure a quality study.

The specific research questions were as follows:

Q1. How does socio-cognitive mindfulness predict perceived stress levels among academic middle managers in higher education?

$H1_0$. Socio-cognitive mindfulness does not predict perceived stress among academic middle managers in higher education at a statistically significant level.

$H1_A$. Socio-cognitive mindfulness predicts perceived stress among academic middle managers in higher education at a statistically significant level, with higher levels of socio-cognitive mindfulness predicting lower levels of perceived stress.

Q2. How does resilience mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education?

$H2_0$. Resilience does not mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education at a statistically significant level.

$H2_A$. The relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education is mediated by resilience at a statistically significant level.

Research Methods and Design

This study employed an exploratory quantitative correlational design. The quantitative method was chosen as the research questions required objective and measurable data represented numerically. These data provided potential explanations for predicting relationships among variables that were known (Curtis et al., 2016). Furthermore, a quantitative design was chosen because my analysis was variable-oriented and examined the interrelationships between operationally-defined variables as opposed to a qualitative research design that focuses on selected cases in an attempt to "interpret the meanings, experiences, attitudes [or] opinions" in an effort to identify patterns (Onwuegbuzie et al., 2009, p. 117). According to current literature, associations between socio-cognitive mindfulness and perceived stress are not fully understood. It is also unclear how the link between these constructs may be explained by resilience. Thus, the proposed study established a mediation model to explore relationships between socio-cognitive

mindfulness, resilience, and perceived stress. Mediation is commonly used to examine how a third variable may explain the relationship between the predictor variable and outcome variable (Field, 2018). A mediation model may help to explain the relationship between variables (Pallant, 2016). Frazier et al. (2004) attested that mediation can enable researchers "to build and test theory regarding causal mechanisms responsible for change" (p. 116). Thus, this type of analysis aligned well with the study.

A correlational study is suitable when the researcher wants to test the research questions, predict relationships among variables, and establish test reliability to describe relationships (Pajo, 2017). Correlational studies are typically categorized as a nonexperimental design since no manipulation of the variables has occurred (Pajo, 2017). More specifically, a cross-sectional correlational design attempts to capture a point in time and collect data from a sample of participants considered representative of the larger population (Spector, 2019). This type of design aligned with the purpose of the study because it was not possible to randomly select or assign participants to certain groups (Curtis et al., 2016). Cross-sectional surveying is also widely used due to the convenience of gathering data (Pajo, 2017). Moreover, it is an efficient use of resources by minimizing the financial costs and time constraints typically associated with other types of designs (Trochim & Donnelly, 2008).

By testing the hypotheses with operationalization of the variables using objective instruments, a quantitative design allowed for further exploration into how to examine the relationship between mindfulness, resilience, and perceived stress. In sum, I determined that a quantitative study was the most appropriate fit given the research questions previously outlined.

Population

One of the study's primary aims was to examine an independent variable (socio-cognitive mindfulness) and a mediator (resilience) on the dependent variable (perceived stress levels). Research has suggested that middle managers in academia are especially susceptible to stress, especially considering the turbulent environment of higher education (Armstrong & Woloshyn, 2017; Vilkinas & Cartan, 2015). Therefore, I identified academic middle managers as a suitable target population since little to no research has explored perceived stress levels or how mindfulness and resilience may influence stress with this population. No data are available to identify or estimate the size of the population of academic middle managers in U.S. higher education institutions. Therefore, the sample size was not based on population size.

Sample

The population consisted of middle managers in academic units within institutions of higher education—department chairs, associate/assistant deans, and deans. Those who are employed in administrative positions higher than the dean level or middle managers typically categorized as staff from other areas of higher education, such as student affairs, business, enrollment or advancement/development offices, were not be included in this study. Based on current literature and to ensure feasibility, inclusionary criteria also encompassed participants who identified as full-time employees at a regionally-accredited higher education institution within the United States and only within institutions that awarded degrees at the level of a bachelor's degree or higher.

Rubin and Babbie (2014) suggested that purposive sampling, as a type of nonprobability sampling, is appropriate when studying a subset of the population that may be rather accessible, but it is not attainable to include all members of the population because it may not be feasible to

define, locate, and survey all. Additionally, Pajo (2017) asserted that purposive sampling ensures a researcher uses judgement and skill "to identify potential participants . . . using specific sampling techniques" (p. 144).

I disseminated the online survey instrument using a directory database of higher education administrators. As previously mentioned, I could not locate any data that confirmed the number of current academic middle managers in the United States that could qualify for the proposed study. Even so, the aim was to ensure a sample consisting of a minimum of 107 participants as determined by a G*power analysis to achieve a statistical power of .05.

Materials/Instruments

I utilized three instruments—the PSS-10 (Cohen, 1994), the 14-item Langer Mindfulness Scale (LMS-14) (Pirson et al., 2018), and the 16-item Predictive 6-Factor Resilience Scale (PR6) (Rossouw & Rossouw, 2016). Certain demographic questions were also included at the end of the survey and encompassed institutional, position-level, and personal demographic questions. Institutional demographics included type of institution (public or private), the institution's Carnegie classification as defined by the Center for Postsecondary Research at the Indiana University School of Education (2018); and the institution's student population based on data from CollegeData.com (2020). Position-level demographic questions included the following information: level of academic leadership position, type of college or program/discipline represented, highest degree awarded within the college/program/department represented, and length of time in current leadership position. Personal demographics captured age, gender, and ethnicity/race. Finally, due to the timing of the data collection period, I included questions related to COVID-19. Items assessed participants' satisfaction of the institutional transition to

remote teaching and learning as well as self-reported increases in work-related and overall stress since the beginning of the pandemic.

Perceived Stress Scale

The PSS-10 is a 10-item measurement designed to identify the degree to which "respondents find their lives unpredictable, uncontrollable, and overloading: three issues central to the appraisal of stress" (Cohen, 1986, p. 387). The tool considers the psychological and physical symptoms related to certain health behaviors associated with positive or negative strategies for coping with stress. It was developed to measure appraised stress within the past 30 days, rather than by counting stressful events. Thus, Cohen et al. (1983), the creators of the scale, contend that the instrument measures "the experience level of stress as a function of objective stressful events, coping processes, personality factors, etc." (p. 386). This conception of stress does not require the respondent to assume "appraisal to particular situations . . . [thus] . . . it is sensitive to the nonoccurrence of events as well as to ongoing life circumstances, to stress resulting from events occurring in the lives of friends and relatives, and to expectations concerning future events" (Cohen, 1986, p 718).

The PSS-10 asks participants to recall thoughts and feelings over the past month to assess positively scored statements, such as "How often have you felt that you were on top of things?" and negatively scored statements, such as "How often have you felt nervous or stressed?" Each item is scored on a 5-point Likert scale (0 = *Never* to 4 = *Very Often*) and scores are then summed while considering the reverse coding. Higher overall scores in perceived stress have been linked to poorer health and mental health outcomes. Cohen and Janicki-Deverts (2012) reported an internal consistency of .91 on two separate samples, which is slightly higher than other researchers, who reported a range between .81 and .86, respectively (Hölzel et al., 2010;

Waszkowska et al., 2017). The Cronbach alpha in this study was .87 and was well within the reports of other studies using this instrument.

In summary, the PSS-10 is the most commonly used psychological measurement for assessing the perception of stress and has been primarily used in research on outcomes related to health and mental health. With the theoretical framework grounded in stress appraisal theory, the scale was deemed a viable measurement to examine one's perception of stress in relation to resilience and socio-cognitive mindfulness, both of which are identified as state-like characteristics in the literature.

Langer Mindfulness Scale

The LMS-14 is a 14-item instrument that measures cognitive flexibility from a socio-cognitive, Western mindfulness perspective. The LMS-14 was recently revamped from the 21-item scale used in previous studies to its current form after researchers conducted further psychometric analyses to evaluate the reliability and factor structure in which the authors found seven of the items to be "redundant, unreliable, or unstable" (Pirson et al., 2018, p. 170), and subsequently removed those items.

The revised LMS-14 includes three subscales: novelty-seeking, novelty-producing, and engagement using a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). Items exhibit both positively scored statements, such as "I am always open to new ways of doing things," and negatively scored statements, such as "I am rarely aware of changes." Higher overall scores in socio-cognitive mindfulness correlate with higher levels of mindfulness. Pirson et al. (2018) reported that higher scores are also associated with three types of well-being. Psychological well-being significantly correlates with outcomes, such as self-esteem, mental health, subjective well-being, and life satisfaction. Physical well-being correlates with strength,

flexibility, and reaction time. Social well-being correlates with positive relations with others, job satisfaction, and employee engagement, creativity, and decision making. Andrei et al. (2016) reported an internal consistency of .82 and .86, which is consistent with Pirson et al. (2018) and other researchers' findings. The Cronbach alpha in this study was .82, and thus aligned with other studies using this instrument.

Most mindfulness researchers have utilized the Eastern view of mindfulness through scales, such as the Mindful Attention Awareness Scale (MAAS) and the Five Facet Mindfulness Questionnaire (FFMQ). However, most of these instruments were intended for clinical settings and address outcomes primarily related to personal health and mental health. Many studies relying on those scales have found influences between stress and resilience within work outcomes (Jha et al., 2017; Kemper & Khirallah, 2015; Lomas et al., 2017; Schussler et al., 2018) and individual leadership characteristics (Montero-Marin et al., 2015; Schwartz, 2018; Wasylkiw et al., 2015), which are important contributions to the study of leadership well-being in relation to resilience.

Some researchers have proposed that the LMS-14, when compared with the MAAS and FFMQ, measures overall well-being more holistically. For example, Pirson et al. (2018) examined differences between the LMS-14 in comparison to the MAAS and FFMQ during the psychometric testing of the construct. They found that although both the LMS and MAAS correlated with well-being and life satisfaction, the LMS-14 was more associated with humor, reaction time, and creativity. In contrast, the FFMQ proved to be unreliable and not a strong predictor of psychological or social well-being (Pirson et al., 2018). Other researchers have concluded that the LMS-14, when compared with more meditative mindfulness instruments,

measured a distinct construct separate from Eastern conceptualizations (Andrei et al., 2016; Siegling & Petrides, 2014).

Accordingly, the LMS-14 appeared to provide the most comprehensive measurement of mindfulness to better understand cognitive flexibility, decision making, and overall well-being within the context of groups or organizations. Therefore, I chose to use the LMS-14 because it may present a more accurate representation of mindfulness that translates the cognitive and behavioral flexibility needed in leadership to promote adaptability in a turbulent work environment.

Predictive 6-Factor Resilience Scale

The PR6, based on neurobiological research, outlines certain interpersonal and intrapersonal protective factors needed for positive coping and ultimately, resilience. The six factors identified within the scale are Vision, Composure, Reasoning, Tenacity, Collaboration, and Health. The authors emphasize how each of the factors, or subscales, directly address the neurobiological components of resilience. Figure 1 provides additional descriptions of each factor, or domain, and each mirrors characteristics of a resilient leader based on prior literature.

Figure 1

The Predictive 6-Factor Resilience Domains

Note. From "*The 6 domains of resilience,"* by J. Rossouw, 2020, (https://home.hellodriven.com/6-domains-of-resilience.html). Copyright 2020 by Hello Driven Pty Ltd. Reprinted with permission.

The authors of the scale assert that the nature of resilience and its impact on positive or negative coping is complex and iterative such that multiple components must be considered and evaluated. This assertion also fits well within Zaccaro et al.'s (2018) more recent recommendation that future research should equally consider interpersonally-oriented characteristics as well as organizationally-focused behaviors, and many current leadership scales focus on only one or two dimensions.

The PR6 is a 16-item instrument that assesses each subscale with one positively and one negatively worded statement using a 5-point Likert scale in which 1 = *Not at all like me* to 5 = *Very much like me.* Rossouw et al. (2017) reported the Cronbach's alpha as .84, which falls within adequate standards as a psychometric tool. Scores are then calculated into percentages within each domain and then averaged for a total score; higher overall scores in resilience correlate with more positive outcomes. This study found the Cronbach alpha to be .80, which is

comparable to Rossouw et al.'s findings. Although the scale is relatively new, the preliminary findings indicate that higher levels of resilience, particularly in the domain of Vision (self-efficacy) are linked to higher job satisfaction (Rossouw et al., 2017). Additionally, by integrating a health factor into the concept of resilience, researchers have found a positive relationship specifically related to overall perception of health, nutrition habits, regular exercise, and perception of restful sleep (Rossouw et al., 2017). Previous studies have already connected the PSS-10 to positive health outcomes; thus, the relationship between this operationalization of resilience and perceived stress may be strengthened. Accordingly, this particular scale may provide a more holistic and dynamic consideration of the link between interpersonal and intrapersonal factors to perceived stress among higher education middle managers during a time in which the neurobiological effects of resilience and perceived stress are well-documented in the literature and prevalent in an ever-evolving environment. The following section provides operational definitions of each variable as well as the detailed process for collecting the data and methods for statistical analysis.

Operational Definition of Variables

The following descriptions provide the definitions of each variable within the proposed study.

Socio-Cognitive Mindfulness

Mindfulness was the independent variable and was operationalized using the LMS-14, a 14-item scale that includes three subscales: novelty-seeking, novelty-producing, and engagement using a 7-point Likert scale in which 1 = *strongly disagree* to 7 = *strongly agree*). Items exhibit both positively scored statements, such as "I am always open to new ways of doing things," and negatively scored statements, such as "I am rarely aware of changes." Items are then summed, with appropriate reverse scoring implemented, and the total score is a continuous variable. The

LMS-14 has shown consistent psychometric validity, and scores range between 14 to 98 with higher scores reflecting higher levels of mindfulness.

Resilience

Resilience, the mediating variable, was operationally defined by using the six factors or subscales of the revised PR6 by Rossouw et al., (2017): Tenacity, Vision, Collaboration, Composure, and Reasoning. A separate domain, Health, includes items related to sleep, exercise, nutrition, and overall perceived health. The PR6, a 16-item instrument, assesses the first five domains with one positively and one negatively worded statement using a 5-point Likert scale in which 1 = *Not at all like me* to 5 = *Very much like me.* Scores are then totaled per subscale with ranges between 2 and 10. The Health domain includes four items that are totaled between 2 and 10 each. The first two health domain items address sleep and nutrition and use the same Likert scale as the first five domains. However, the last two health items ask about frequency of exercise (1 = *Less than once per week* to 5 = *Four times or more per week* and overall health. The final item asks the following: *Overall, I'd rate my health as . . .* in which 1 = *Poor* to 5 = *Excellent*. The total score is the average of all domains and then translated into a percent score. The total PR6 score is a continuous variable with total scores ranging between zero and 100. According to Rossouw and Rossouw (2016), higher scores equate to higher levels of resilience and are categorized as 0–25 (low resilience), 25–75 (medium resilience), and 75–100 (high resilience).

Perceived Stress

In this study, perceived stress was a continuous dependent variable and defined by the PSS-10, a 10-item measurement developed by Cohen et al. (1983). Each item is scored on a 5-point Likert scale (ranging from 0 = *Never* to 4 = *Very Often*), and scores are then summed while

considering the reverse coding. The PSS total score ranges between zero and 40 with zero to 13 considered low stress, 14 to 26 considered moderate stress, and 27 to 40 categorized as high perceived stress.

Demographic Information

I also collected common demographic information, which included institutional, position-level, and personal demographics as outlined below. Also, see Appendix E for more information.

Level of Academic Middle Manager Position. This is a categorical variable, indicating current leadership position. Options included 1 = *Dean or Director or equivalent*, 2 = *Associate or Assistant Dean/Director or equivalent*, and 3 = *Department Chair or Director or equivalent* and 4 = *Other*.

Type of College or School. If a participant selected dean or associate dean, they were directed to an item in which a text box was provided so the participant could type the type of college or school they head. Although college or school names differ among American universities, examples may include School of Social Work or College of Education and Human Services. Since this was an open-ended item in the survey, it was considered qualitative data in which a level of measurement was recategorized into numerical form. After the data was collected, I recoded college types based on a pattern or theme into nominal variables. This demographic variable was primarily used as descriptive data to help describe the sample population surveyed.

Type of Department or Program. If a participant selected department chair or equivalent, they were directed to an item in which a text box was provided so the participant could type the type of academic department or school they lead. Although departmental and program names differ among institutions, examples may include: Sociology, Language and

Literature, and so on. Since this will be an open-ended item in the survey, it was considered qualitative data in which a level of measurement was recategorized into numerical form. After I collected the data, I recoded college types based on a pattern or theme into nominal variables. This demographic variable was primarily used as descriptive data to help describe the sample population surveyed.

Highest Degree Awarded Within College/Program/Department. Participants were asked to select the highest degree awarded within their college (if a dean or associate/assistant dean) or within their department/program/discipline (if a department chair or equivalent). Options were 1 = *Doctorate*, 2 = *Master's*, or 3 = *Bachelor's*; this was an ordinal variable.

Length of Time in Current Academic Leadership Position. Participants were asked to provide the length of time in their current leadership position as a continuous variable; participants typed in the years and months (if applicable).

Type of Institution. Participants were asked to identify whether the institution was considered a 1 = *private for-profit entity*, 2 = *private not-for-profit*, or 3 = *public entity*; this was a categorical variable. Public institutions are primarily funded by state governments and tuition revenue. Private institutions are funded through private donors and tuition revenue and do not receive state funding.

Institution Student Population. Participants selected the category that best described their student population for both undergraduate and graduate student enrollment. The following categories were based on CollegeData.com (2020): 1 = *less than 5,000 students*, 2 = *5,000–15,000 students*, and 3 = *greater than 15,000 students*. This was an ordinal variable that labeled *small* institutions as enrolling less than 5,000 students, *medium* institutions between 5,000 and 15,000 students, and *large* institutions as more than 15,000 students.

Institution Carnegie Classification. An institution's Carnegie classification is defined by the Center for Postsecondary Research at the Indiana University School of Education (2018), and is the most commonly used system to categorize institutions into eight mutually exclusive categories based on types and number of degrees conferred, academic disciplines offered, and certain specializations; I considered this a nominal variable. Participants were asked to select one of the following categories that best described their institution: 1 = *Doctoral*, 2 = *Master's College or University*, 3 = *Baccalaureate College*, 4 = *Baccalaureate/Associate's College*, 5 = *Special Focus: Four-Year Institution*, and 6 = *Tribal College*. If participants were unsure what their institution's Carnegie classification was, they may have opted to select 7 = *I do not know*, and were provided the direct link to an external website to search for their institution. They could then return to the survey and select the most appropriate category.

Age. Participants were asked to categorize their current age as an ordinal variable, based on the following selections: 1 = *under 30 years of age*, 2 = *30 to 39*, 3 = *40 to 49*, 4 = *50 to 59*, 5 = *60 to 69*, and 6 = *70 years of age or over*. They could also select 7 = *I do not care to disclose*.

Gender. Participants were asked to select the gender category they most identified with: 1 = *Female*, 2 = *Male*, 3 = *Non-binary*, 4 = *Transgender*, 5 = *Gender Nonconforming*, 6 = *Other* with text available to type in an answer. Gender was presented as a categorical variable. They also may have selected 7 = *I prefer not to describe* or *I do not care to disclose*.

Ethnicity. Participants were asked to select the ethnicity(ies) they most identified with and were instructed to select all that applied. This categorical variable included (in alphabetical order): 1 = *American Indian or Alaskan Native*, 2 = *Asian/Asian American*, 3 = *Black/African American*, 4 = *Hispanic/Latino or Spanish origin*, 5 = *Middle Eastern and North African*

(*MENA*), 6 = *Native Hawaiian or Pacific Islander*, 7 = *White*, 8 = *Othe*r (with text to type an answer), or 9 = *I do not care to disclose*.

These ethnicity categories were selected based on the United States Census Bureau's (2017) research to improve data on race and ethnicity in preparation for the 2020 Decennial Census. Based on multiple years of quantitative and qualitative research in collaboration with multiple agencies, the Census Bureau made recommendations to improve the accuracy of ethnic categories by collapsing all to "Ethnicity" (to more accurately capture the Hispanic/Latino population) and to include the classification of a Middle Eastern and North African reporting category (Census Bureau, 2017). Despite these final recommendations made to the U.S. Office of Management and Budget (OMB), the OMB failed to act on the recommendations under the current administration (Wang, 2018). Thus, the OMB, the Census, and the Centers for Disease Control continue to use the dated 2010 categories for race and ethnicity reporting that have been determined to be an inaccurate representation of ethnicity in the United States.

Data Collection and Analysis Procedures

The purpose of this correlational study was to examine how socio-cognitive mindfulness predicted perceived stress among academic middle managers in higher education, and whether the relationship was mediated by resilience. The primary strategy for recruiting participants utilized purposive sampling procedures. I procured the 2020 Higher Education Directory published electronically by Higher Education Publications, Inc., a company that specializes in maintaining up-to-date and accurate contact information on higher education administrators in the U.S. It is important to note that the company must rely on each university to report and provide accurate email addresses within certain position categories. Thus, some universities may only report deans, while others report deans and certain associate deans, assistant deans, and/or

department chairs. Additionally, it was noted that some universities may name similar positions as Director or Head of a college or department. The researcher paid and requested an extract that matched the inclusionary criteria. The final extract included 6,495 email addresses that included 5,764 deans, 355 directors, 349 chairs, and 27 heads of academic units. The extract list was organized by state and to enhance privacy protections, I removed all identifiable information from the list to generate a separate spreadsheet of the 6,495 email addresses. Each email address was then assigned a unique number (1 to 6,495).

Upon obtaining the extract and prior to submitting an application to the ACU Institutional Review Board (IRB), COVID-19 swept through the United States at a rapid pace leaving most universities to quickly decide to move all higher education courses to online for the remainder of the spring 2020 semester. Due to the quick shift in educational delivery to virtual learning and remote-based work, my dissertation chair and I, with permission from the committee, chose to include additional questions related to the transition to online due to COVID-19 as well as assess work stress and overall stress since the pandemic began.

Data Collection

Once I obtained ACU IRB approval, I collected data from April 21, 2020, to May 19, 2020. I randomized 1,070 emails (from the total 6,495) using the Research Randomizer, a free website resource utilized by researchers to generate random numbers to assign participants (www.randomizer.org). The settings entered for the randomizer tool were number of sets: *1*; numbers per set: *1,070*; unique number in each set: *yes*; sort: *yes*; place markers off: *no*. The first randomized list of numbers was then used to copy and paste the previously assigned unique identifier to the email addresses extracted from the database. Then I sent the email invitation to the first group of 1,070 randomized emails (Appendix B). It is important to note that 39 emails

returned an automatic undeliverable notification and one participant requested to be removed from the list. Several also provided automatic replies that they had retired, left the university, or were on sabbatical. After approximately two weeks, participants were emailed a reminder thanking those who may have already participated. Once the survey had been open for approximately three weeks, I noted that the total number of responses was 90 with an 8% response rate. To increase the number of responses, I determined a second randomized sample of email addresses would receive an invitation to participate. I removed the emails of the prior participants' email addresses to create a new list and used the Research Randomizer online resource with the same settings to randomize another 1,000 email addresses. I double-checked all random numbers in the second round to ensure duplicated numbers from the first round were excluded. The second randomized list of participants were sent the same email invitation and 44 were undeliverable with a few other auto-replies regarding recent retirement, sabbatical, and so on. Since the timeline for data collection occurred close to the end of the academic year, I sent an email reminder approximately one week later with notice that the survey would close in one week. During the four-week period, a total of 172 participants responded to the survey; the final response rate was 8%. A G*power analysis revealed that with two independent variables and one dependent variable, a minimum sample of 107 was required to achieve a statistical power of .05. Therefore, the minimum threshold was met for a strong mediation model.

All participants received an invitation (Appendix B) via email. In the invitation email, potential participants were notified that eligibility required full-time employment in one of the following leadership positions at an accredited university or college in the United States: dean or director (or equivalent) of an academic college, associate/assistant dean (or equivalent) of an academic college, or department chair or director (or equivalent) of an academic

program/department. If they believed they were eligible, they were asked to confirm eligibility by clicking the box beside each of the inclusionary criteria outlined in Appendix C. Once all criteria were met, participants were directed to the next screen to review the electronic informed consent and begin the online survey. The informed consent addressed the purpose of the study, as well as the participant expectations, inclusionary criteria to participate, and the risks and benefits associated with the study. In addition, confidentiality, anonymity, voluntary participation, and the right to withdraw at any time were stressed. To extend additional anonymity protection, no IP addresses were captured via SurveyMonkey reporting. At the end of the informed consent, those who read the consent and agreed to voluntarily participate in the study were asked to click a box to confirm by clicking "yes." If they clicked, "no," they were directed to a disqualification screen and thanked for their interest in the survey.

Once participants clicked "yes" on the informed consent screen, they were directed to a new screen with the PSS-10. Appendices D.1, D.2, and D.3 provide the permission to use but not publish the three survey instruments used in the study. Upon completion of the PSS-10, the next screen directed them to complete the LMS-14. After responding to the items, participants then clicked "Next" and completed the PR6-16, and directed to the final screen and section of the survey to complete 11 demographic questions (Appendix E) and five questions related to COVID-19 (Appendix F). Once the demographics and COVID-19 sections of the survey were completed by clicking "Submit," a separate screen appeared thanking them for their participation.

It is important to note that participants were able to edit their responses while completing the survey. They were also permitted to exit the survey at any time and reenter at a later time by clicking the original email invitation link. If they chose to exit at any time and then reenter, the

last page/screen they fully completed appeared so they did not have to restart the survey. However, upon clicking "Submit" at the end of the survey, respondents were unable to return or edit the survey again. Data collection remained opened for approximately four weeks. Reminder emails were sent after approximately 10 days thanking participants if they had already participated and reminding them to participate and that the survey would remain open for two more weeks.

Data Storage and Management

I exported the survey data from SurveyMonkey as an Excel file format and downloaded it to a password-protected laptop. Since no IP addresses or other potentially identifiable information were captured in the survey, anonymity and privacy were protected. I then uploaded data were into SPSS v.25.0. The data file will be maintained for record-keeping purposes at least seven years after the conclusion of the dissertation study at which time, the data will be destroyed.

Data Analysis

After the raw data file was downloaded in numerical form from SurveyMonkey and exported into an Excel spreadsheet, I examined the data for accuracy and any missing values. It is important to note that nine cases were deleted due to missing significant portions of the three measurement scales; therefore, the final viable responses were 163 (N = 163). Then, I exported all screened and cleaned data into SPSS for analysis. I conducted preliminary analyses to assess normality and determine any outliers. Once outliers were identified, I rechecked the data for accuracy based on the number of responses, outliers, and/or missing data. I then calculated total scores for each of the three measurements, PSS-10, LMS-14, and PR6-16, taking into account reverse scoring for negatively worded items. Descriptive statistics were also calculated to

describe the sample population, assess frequency distributions, determine measures of central tendency, and identify standard deviations for all demographic, independent, mediator, and dependent variables. Summary tables have been provided in Chapter 4 of this dissertation manuscript. Additionally, I calculated Cronbach's alpha values to analyze internal consistency and reliability of the three measurements.

Inferential statistics were used to test the two hypotheses: linear regression and models for multiple regression for mediation, which I examined in light of the hypotheses. Prior to running statistical tests, assumptions of multiple regression were met; more specifically, normality, linearity, homoscedasticity, and collinearity. I analyzed data using linear regression for each relationship among the independent (mindfulness), the mediator (resilience), and the dependent variable (perceived stress). Once a significant statistical relationship was established between the independent and dependent variable, the independent and mediator, and the mediator and the dependent variable, multiple regression was used to test the mediation model between socio-cognitive mindfulness, resilience, and perceived stress. I conducted a multiple regression analysis to allow for more sophisticated methods of exploring correlations or interrelationships among more than two variables while also considering the predictive ability (Pallant, 2016). Standard linear regression is commonly used to test the strength of the relationship between variables (Pallant, 2016) and tests the first research question: How does socio-cognitive mindfulness predict perceived stress levels among academic middle managers in higher education?

Multiple regression then allowed for measuring the percentage of variance between the independent variable (socio-cognitive mindfulness), the mediator variable (resilience), and the dependent variable (perceived stress). Thus, this type of statistical analysis also works well with

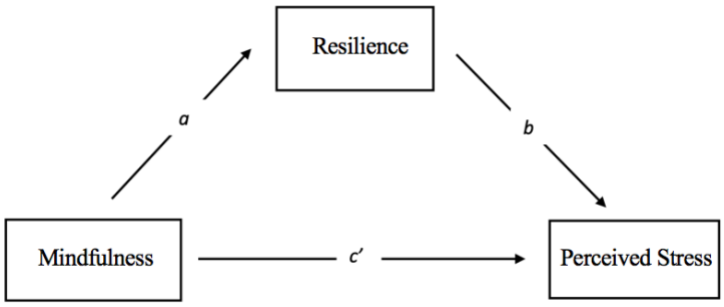
mediation models. A mediation model is an essential component of social science research as it seeks to uncover how variables influence one another in complex ways.

According to Baron and Kenny (1986), four steps must be followed to establish mediation. The four criteria are (a) when socio-cognitive mindfulness (independent) is significantly associated with perceived stress (dependent); (b) when socio-cognitive mindfulness (independent) is significantly associated with resilience (mediator); (c) when resilience (mediator) is significantly associated with perceived stress (dependent), after controlling for socio-cognitive mindfulness (independent); and (d) when the significant relationship between socio-cognitive mindfulness (independent) and perceived stress (dependent) is significantly diminished when resilience (mediator) is controlled for. In this study, mediation deepened further exploration into how resilience explained the relationship between socio-cognitive mindfulness and perceived stress and addressed the second research question: How does resilience mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education?

Therefore, this design adopted Baron and Kenny's (1986) framework, which considered the mediator to be "the generative mechanism" that links the independent to the dependent variable (p. 1173). Kenny (2008) further explained that the mediator is often an internal or psychological process variable. Figure 2 illustrates the conceptual model to address the hypothesized relationships between variables.

Figure 2

Conceptual Model of Mediating Effect of Resilience



Mindfulness and resilience and the subsequent impact on perceived stress is complex and iterative such that multiple components must be considered and evaluated. Williams and Cooper (1998) contended that "stress is complex, multivariate, and multilevel, therefore questionnaires measuring a broad range of variables may explain more of the variance in outcomes" (p. 319). Hence, the conceptual model in this study aligned well with a multidimensional nature of stress. Future strategies for examining the complexity of stress may be to consider certain demographic items as control variables, such as age, gender, type of university, or length of time in management role, since these factors may impact the relationships between variables.

Ethical Considerations

This cross-sectional study employed a survey-based design and collected data from a sample of academic middle managers within higher education institutions in the United States. The online survey captured levels of perceived stress, socio-cognitive mindfulness, and resilience, and collected demographic information that allowed respondents to remain anonymous. The following section provides clarification that ensured ethical considerations were integrated within the research design, more specifically informed consent, beneficence, respect

for anonymity and confidentiality, and respect for privacy. There are a limited number of ethical concerns within this study.

As previously noted, the ACU IRB approved this study's method for data collection (Appendix A) and each of these considerations were thoroughly addressed in the informed consent document and in the IRB application. First, all participants were required to thoroughly read, review, and electronically agree to the informed consent. Respondents were also provided clarification that their participation was voluntary, and that they could choose to withdraw from the survey at any time without penalty. They could also take a break from the survey due to time constraints or discomfort and return to the survey at a later time to complete it in full if they so desired.

The National Institutes of Health Office of Extramural Research (n.d.) defined *beneficence* as an intentional research strategy to minimize possible harm while simultaneously maximizing the potential benefits for research participants. This study was categorized as social science research in which a cross-sectional survey design was implemented. Since this study was not based on an experimental design, participants were not manipulated or exposed to an intervention; thus, the nonexperimental design reduced the risks typically associated with social research, and in particular, psychological or social discomfort. Additionally, participants did not have direct contact with the principal investigator, and therefore, risk of coercion or conflict of interests were significantly reduced. The population, academic middle managers, were not considered a vulnerable population that required specific protection in social science research. However, there were minimal risks. As stated in the informed consent, participants may have experienced some psychological discomfort or inconvenience when discussing topics of stress, mindfulness, and resilience. Nevertheless, participants completed the surveys online, and

therefore, could choose a comfortable environment if they so desired. Again, they were informed that if psychological discomfort occurred, they could choose to withdraw from the study at any time or take a break and return to the study at a later time and complete the survey at a later time. This online survey took an average of seven to nine minutes to complete and could be done in a comfortable environment chosen by the participant.

In order to maintain confidentiality, no participant names or names of their institutions were collected in the survey and no respondent email addresses were captured in the survey. Demographic questions were included at the end of the survey, but participants were instructed that they were not required to answer questions they were not comfortable with. Answering certain demographic questions may make the participant feel that they could be identifiable, but data was only reported at the aggregate level. While protecting full anonymity and privacy is not a guarantee, I implemented certain protections to minimize this concern. First, no IP addresses were collected via the SurveyMonkey link. As previously mentioned, none of the demographic items were mandated questions; participants concerned with being identified could choose not to disclose the basic demographic information requested. Finally, I reported results in aggregate form only to minimize concerns related to anonymity, confidentiality, and privacy of participants.

I complied with all the above stated ethical considerations throughout the research process and only with expressed approval of the IRB. Thus, I collected no data prior to IRB approval, and I did not anticipate that the study would need to be extended beyond the one-year period typically allowed by the IRB. In conclusion, I considered common ethical concerns typically associated with human-subject research and fully addressed any concerns or precautions within this section.

Assumptions

It is assumed that the database used for this study, the 2020 Higher Education Directory, included appropriate and updated information on potential participants. There was also an assumption that all participants surveyed would be honest when selecting the inclusion criteria and would be forthcoming and honest when responding to each instrument and subsequent demographic questions. Finally, it was also assumed that the recruited participants represented the population of academic middle managers in the United States.

Assessment Measure Assumptions

Based on thorough examination of the scholarship related to each variable, I assumed that each scale selected for this study was reliable and valid and that errors within the measurements were small. As with most self-report measures, there was some risk and limitation but it was generally assumed that the participant could accurately assess themselves in relation to the items on each scale. I also assumed that participants' understanding of each question was evident and that disclosure of information was accurate in nature. It was also assumed that each participant read the informed consent thoroughly to understand their rights to withdraw and the protections taken to ensure anonymity, confidentiality, and privacy. Finally, it was assumed that participants completed the survey one time; hence, I observed no duplications of responses.

Limitations

As with any cross-correlational survey-based design, there were several limitations to the study. First, nonprobability sampling was employed; thus, running the risk that the results may not be generalizable. For example, sampling methods may have resulted in some universities not being represented, or middle managers listed in the database may not have been representative of the total population. Utilizing self-report measures was an inherent risk as the study may be

strengthened by attempting to triangulate data via a mixed method design or using observable information or self-reports from third parties who are supervised or observed by the participant. There was also the concern that social desirability may have impacted the participants' responses despite measures taken to ensure anonymity, confidentiality, and privacy. When considering the conceptual model theorized in this study, one particular weakness of a single-mediator model is the risk of missing certain variables that may explain the relationship between the independent, mediator, and dependent variables (Fritz et al., 2016).

Delimitations

There were several delimitations within the scope of this proposed study. By narrowing the scope to institutions within the United States (excluding U.S. territories) and to those who were employed by four-year universities delimited the ability to participate in the study. I determined that this decision would minimize the potential influences that culture, customs, or structures/systems of higher education in other countries or two-year colleges and/or trade schools may have impacted the findings and introduced confounding variables. Furthermore, the focus on resilience, socio-cognitive mindfulness, and perceived stress provided a narrow scope of stress and resilience within higher education leaders.

Much of the scholarship that addressed these variables considered multiple frameworks and operationalization of each construct. As noted in the literature review, resilience may be measured in many different ways and I could have chosen a more frequently studied and established measure for resilience. However, given the emerging research on neurobiological components of resilience, I chose to use a more recent measure, the PR6.

There are many reasons and potential variables to explore when examining a relationship between resilience and stress. Prior research has examined those variables which include, but are

not limited to, social support (Cobb, 1976; Wilks & Croom, 2008), self-efficacy (Smith, 2018), psychological capital (Avey et al., 2009; Luthans & Youssef-Morgan, 2017), well-being (Grover et al., 2019; Rupert & Dorociak, 2019), and Eastern concepts of mindfulness (Lomas et al., 2017; Roche et al., 2014). However, given the selected framework of stress appraisal theory in this study, I cautiously made the choice to examine the more psychologically-framed Western construct of socio-cognitive mindfulness because Langer (2005) has hypothesized a link, but no prior studies have examined the relationships between this type of mindfulness and stress.

Summary

In sum, this research design involved a cross-sectional quantitative study using a nonprobability sample of academic middle managers within U.S. institutions of higher education. Upon confirmation of eligibility criteria and completion of informed consent, participants were asked to complete three measures: the PSS-10 (Cohen, 1994), the LMS-14 (Pirson et al., 2018), and the PR6-16 (Rossouw & Rossouw, 2016). Additionally, I included standardized demographic questions in the online survey as were questions related to stress and COVID-19; however, no identifiable information was captured, and therefore, confidentiality and anonymity were protected.

I used SPSS for statistical analysis, and conducted descriptive and inferential analyses. Data were analyzed using linear regression and multiple regression to determine correlations between perceived stress, socio-cognitive mindfulness, and resilience factors. Using resilience as the mediator, the study investigated the effects of socio-cognitive mindfulness on resilience and perceived stress. The research design and methodology addressed the research questions effectively and ethically as ethical considerations, assumptions, limitations, and delimitations were thoroughly addressed. The operational definitions of all variables and demographic

information were also provided in this chapter. Based on the stress appraisal theory, originated by Lazarus (1966) and Lazarus and Cohen (1977), this study extends further research on the importance of enhancing mindfulness by building resilience and thus, reducing perceived stress among middle managers working in the ever-evolving situation in higher education.

Chapter 4: Results

The purpose of this quantitative correlational study was to examine how socio-cognitive mindfulness predicted perceived stress among middle-managers in higher education, and whether the relationship was mediated by resilience. To guide the methodology, I developed two research questions based on a mediation model with corresponding hypotheses. Each hypothesis was tested and is presented in this chapter.

This chapter addresses the findings of this study and includes a brief overview of the data collected, including demographics with descriptive statistics. Additionally, discussion on how missing data was handled is included as well as the descriptive statistics for the three variables. I addressed both research questions and applied the appropriate inferential statistics. Assumptions for multiple regression and outliers are also considered. Both hypotheses were tested using linear and multiple regression analyses and the results are reported. Finally, I present a brief summary of the results at the end of this chapter.

Findings

Overview of Respondents

The population for this study was middle-managers in academic units within institutions of higher education—department chairs, associate/assistant deans, and deans. Additional inclusionary criteria included those able to identify as full-time employees at a regionally-accredited higher education institution within the United States, and only within institutions that award degrees at the level of a bachelor's degree or higher. Thus, no community colleges or trade schools were included. At the time of this dissertation, no data was available to identify or estimate the size of the population of academic middle-managers in U.S. four-year institutions

that fit the inclusionary criteria. Therefore, I did not determine the sample size based on population size.

I sent out an online survey via SurveyMonkey and it remained open for approximately four weeks. Two rounds of emails were sent with 1,070 email invitations in the first round and an additional 1,000 email invitations sent in the second round. Roughly 80 emails returned automatic undeliverable notifications or automatic replies that the person had retired, left the university, or was on sabbatical. After approximately 10 days, email reminders were sent for each group. During the four-week period, a total of 172 participants responded to the survey with a final response rate of 8%. Per a G*power analysis, a minimum sample of 107 was required to achieve statistical power of .05; thus, the survey was closed within the four-week period because enough responses were obtained.

Once the survey closed, I exported all individual responses from SurveyMonkey in numerical form, saved as a Microsoft Excel spreadsheet, and uploaded into SPSS v.25.0. Since no IP addresses, email addresses, or other potentially identifiable information were captured in the survey, anonymity and privacy were protected. I examined the raw data for errors, missing responses, and any normality deviation. It is important to note that nine cases were deleted due to missing significant portions of at least one of the three measurement scales; thus, there were 163 (N = 163) usable surveys. I then computed each measurement (based on sum or mean of related items) per the operational definition for each of the three variables. An alpha level of .05 was set for all analyses and the required assumptions for linear and multiple regression analyses were observed and included normality, linearity, homoscedasticity, and multicollinearity. Details are provided in the remainder of this chapter.

Descriptive Statistics of Respondents

A total of 163 participants completed the 56-item web-based survey that included three measurement scales assessing the independent variable (using the LMS-14), the mediator (using the PR6-16), and the dependent variable (using thePSS-10), 11 demographic questions, and a brief five-item survey related to stress and online/remote transition issues due to COVID-19.

Demographic questions included three categories, individual, position-level, and institutional information. Individual demographics captured personal characteristics, namely age range, identified gender, and ethnicity. As shown in Table 2, a majority of respondents (68.7%) reported an age range between 50 and 69 years of age. These data appeared somewhat consistent with other studies in which the average of an academic middle manager was between 51 and 54 years of age (Gmelch & Burns, 1994; Gmelch et al., 1999; Wolverton, Wolverton, et al., 1999).

Table 2

Frequencies and Percentages of Participant Demographics (Age Range)

Age Range	*f*	%
Less than 30 years of age	0	0.0
30 – 39 years of age	4	2.5
40 – 49 years of age	29	17.8
50 – 59 years of age	60	36.8
60 – 69 years of age	52	31.9
70 years or older	10	6.1
I do not care to disclose	2	1.2
Total valid responses	157	96.3
Not reported	6	3.7
Total	163	100.0

In Table 3, respondents' gender demographics appeared to be somewhat equally distributed between female and male with 49.1% (n = 80) participants identifying as female. Unfortunately, it is difficult to locate data on the overall percentage of deans or department

chairs at the national level as most studies report college or program specific data. However, Flaherty (2019) recently reported that women account for almost half of all higher education administrator positions in the United States. The most recent Administrators in Higher Education Annual Report, in which 1,160 U.S. institutions were surveyed, indicated that 45% of deans and 55% of associate/assistant deans identify as women (Pritchard et al., 2020); data on department chairs were not captured in the annual report. Dugger (2001) reported a higher proportion of females in dean, associate/assistant dean, or department chair positions in nursing or education disciplines. Since almost 40% of the respondents in this study were either middle managers in the health professions or education, it is reasonable to consider the type of college or department represented in the sample may have lent to a higher proportion of women represented in this study.

Table 3

Frequencies and Percentages of Participant Demographics (Gender Identity)

Gender	*f*	%
Female	80	49.1
Male	72	44.2
Non-binary	1	.6
Transgender	1	.6
I do not care to disclose	1	.6
Total valid responses	157	95.1
Not reported	8	4.9
Total	163	100.0

Table 4 outlines the reported ethnicities of the respondents with an overwhelming majority of respondents (89%) identified as White. Interestingly, this data aligns with seminal studies of mid-level academic managers from two decades ago (Gmelch & Burns, 1994; Gmelch et al., 1999; Wolverton, Wolverton, et al., 1999). To date, there are no data available that provide

a more recent account of ethnicity representation among deans, associate/assistant deans, or department chairs at the national level. However, the 2020 Administrators in Higher Education Annual Report reported the composition of all levels of higher education administration, from top executive officers to associate/assistant deans, in aggregate form (Pritchard et al., 2020). In that report, 83.9% were White administrators, 7.9% were Black/African American, 3.9% were Hispanic/Latinx, 2.9% were identified as Asian, and 1.4% represented other ethnicities. Hence, the study sample appeared to represent a slightly higher proportion of White mid-level managers when compared to the national proportion of higher education leaders. This may also be attributed to the fact that ethnic minorities tend to represent lower levels of administration, such as middle management, at a higher rate than top levels of senior administration posts, such as presidents, provosts, and so on (Pritchard et al., 2020).

Table 4

Frequencies and Percentages of Participant Demographics (Ethnicity)

Ethnicity	*f*	%
American Indian or Native Alaskan	1	.6
Asian or Asian American	2	1.2
Black or African American	5	3.1
Hispanic, Latino or Spanish origin	4	2.5
White	139	85.3
Other (Two or more ethnicities)	5	3.1
Total valid responses	156	95.7
Not reported	7	4.3
Total	163	100.0

Additionally, position-level demographics are reported in Tables 5 and 6. Seventy-eight percent of respondents (n = 128) held a dean or equivalent level position, while only 15% reported a department chair or director (n = 25) level position. The proportion of position levels was fairly consistent with the extracted database list. According to the extracted email list used

with permission from the 2020 Higher Education Directory, 88.7% of the population were categorized as deans and 11.3% were identified as department chairs or equivalent. There was no category for associate or assistant deans provided within the database; thus, comparable data was not available.

Table 5

Frequencies and Percentages of Participant Demographics (Position Level)

Position Level	*f*	%
Dean or equivalent	128	78.5
Assoc/Assist Dean or equivalent	10	6.1
Department Chair/Director or equivalent	25	15.3
Total	163	100.0

The survey also asked respondents position-level specific questions related to the type of college or academic program they led, the highest degree awarded within their college/program, and length of time they held their leadership position. Participants who identified as a dean or associate/assistant dean were asked to enter the type of college in which they held their current leadership position while department chairs were asked to enter the type of academic department or program they led. I then examined themes from the qualitative data and coded them into 10 mutually-exclusive categories. Of the 133 dean or associate/assistant dean respondents who answered the qualitative item, 24.8% represented colleges within the health professions, 15.8% were in the arts/humanities, 15% were in education, 12% represented business colleges, 8.3% were in the natural sciences, 7.5% worked at STEM-related colleges, 6% were in social sciences, 3% identified within religious or seminary-related colleges, 1.5% were law school deans, and an additional 6% represented other disciplines. Among the 25 department chair respondents, 24% represented health profession programs, 20% were in education, 16% were in arts/humanities,

and an additional 16% were in social sciences, 12% represented religious/seminary-related academic programs, 8% were in STEM-related programs, and 4% were in business programs. At present, there is no national data available that identifies the percent of types of colleges and programs represented among American colleges and universities.

In addition, respondents reported the length of time they held their current leadership position. Participants entered the number of years (if one year or more) or months (if less than one year). Table 6 shows the descriptive statistics for their length of time in leadership position at the college or program leadership level. It is important to note that any data less than one indicate months if the respondent has been in the current position for less than one year (e.g., .0 equals less than one month and .8 equals eight months). Within this sample, deans and associate/assistant deans held their current middle-management position an average of five years, while department chairs or those in equivalent positions were in the position an average of six years. These data seemed to align with similar studies. For example, when surveyed on stress in academic middle manager positions, respondents' length of time in their current position averaged between five to six years as a dean (Gmelch et al., 1999; Wolverton, Wolverton, et al., 1999) and six years as a department chair (Gmelch & Burns, 1994).

Table 6

Mean, Range, and Standard Deviation of Participant Demographics (Length of Time in Current Position)

Length of Time in Position	*N*	Min	Max	*M*	*SD*
Dean or Assoc/Assist Dean or equivalent	137	.0	29.0	4.9	4.9
Department Chair/ Director or equivalent	25	.8	24.0	6.1	5.6
Total	162				

Tables 7, 8, and 9 show the frequencies and percentages for demographics of the respondents based on institutional characteristics. As shown in Table 7, 52% of respondents (*n* = 85) were employed at public institutions while 44% were employed (*n* = 71) at private, nonprofit institutions, and a small percentage were employed at private, for-profit institutions.

Table 7

Frequencies and Percentages of Participant Demographics (Type of Institution)

Type of Institution	*f*	%
Private, For-Profit	5	3.1
Private, Nonprofit	71	43.6
Public	85	52.1
Total valid responses	161	98.8
Not reported	2	1.2
Total	163	100.0

According to the Indiana University Center for Postsecondary Research (2018), there are a total of 2,874 institutions of higher education that award a bachelor's degree or higher within the United States. Of those colleges and universities, 16% are categorized as private, for profit; 57% are private, nonprofit; and 27% are public institutions (Carnegie Classification of Institutions of Higher Education, n.d.). Therefore, the sample in this study represented more public institutions than the national average. It is important to note that since the extracted database email list I used included multiple contacts from each college and university, it may have been more likely for academic middle-managers at the same institution to receive the invitation and complete the survey.

Table 8 provides information on the size, based on student population, of each institution represented. Forty-six percent (*n* = 75) of participants were employed at small institutions, defined as fewer than 5,000 students. Medium institutions represented 33% of the sample (*n* =

54), while 20% of respondents (n = 33) reported working at large institutions of more than 15,000 students. Based on CollegeData.com (2020), approximately 74% of U.S. institutions in their sample are categorized as having small student populations of fewer than 5,000. In addition, 18% are categorized as medium-sized institutions, while 8% are considered large institutions. Thus, this study sample provides a more distributed percentage of respondents with smaller institutions still representing a majority of the representation.

Table 8

Frequencies and Percentages of Participant Demographics (Institution Student Population)

Student Population	*f*	%
Small (Fewer than 5,000)	75	46.0
Medium (500 to 15,000)	54	33.1
Large (More than 15,000)	33	20.2
Total valid responses	162	99.4
Not reported	1	.6
Total	163	100.0

Institutional Carnegie classification information is reported in Table 9. According to this study's demographic data, almost three quarters (72%) of the respondents were employed within doctoral or master's level universities. According to the Indiana University Center for Postsecondary Research (2018), doctoral and master's level colleges and universities account for only 38% of the nation's institutions. However, that percentage includes the overall number of institutions, including community colleges and trade schools. Meanwhile, special-focus, four-year institutions (law schools, medical, health sciences, and others) represent over 30% of institutions that award bachelor's degrees or higher within the United States and Baccalaureate and Baccalaureate/Associate's Colleges account for approximately 30% of four-year degree-granting institutions.

Table 9

Frequencies and Percentages of Participant Demographics (Institution Carnegie Classification)

Carnegie Classification	*f*	%
Doctoral University	55	33.7
Master's College/University	62	38.0
Baccalaureate College	15	9.2
Baccalaureate/Associate's College	12	7.4
Special Focus: Four-Year	4	2.5
Tribal College	1	.6
I do not know	13	8.0
Total valid responses	162	99.4
Not reported	1	.6
Total	163	100.0

In summary, this section outlined the demographic characteristics captured in the study. A majority of the institutional demographics appeared to align with most national-level information available. However, position-level demographics indicated that deans (78.5%) heavily represented the mid-level managers in this sample; department chairs accounted for only 15%, and just six percent identified as associate/assistant deans. Overall, White respondents (89%), those who identified as female (49.1%), and those between the ages of 50 and 69 (68.7%) made up the majority of the sample in this study.

COVID-19 Pandemic Related Responses

The final survey items related to the recent impact of the COVID-19 pandemic on job responsibilities, satisfaction of institutional transition to online learning and remote-based work, and work-related and overall stress levels since the pandemic began in the United States. As previously noted, the online survey was disseminated amid an unprecedented time of a novel coronavirus pandemic (COVID-19) in which most American higher education institutions quickly transitioned to an online learning and remote-based work environment.

For context, a novel coronavirus, now known as SARS-CoV-2, was first identified in Wuhan, China in November 2019 as a highly contagious, viral respiratory illness that caused higher hospitalization rates and death rates than seasonal flus (Centers for Disease Control and Prevention [CDC], 2020). The disease spread quickly and into almost every country from January to March 2020, with escalating numbers seen in the United States throughout March and April 2020. During this rapidly evolving period, universities began to make decisions about whether students should return to campuses after spring break. By the end of March 2020, almost every higher education institution in the United States was significantly impacted by the pandemic, with an estimated 25.7 million college students affected by the transition to virtual/online learning (Alexander, 2020).

In an effort to interpret the findings in light of this rapid shift, I added five items to the survey in late March 2020 to address stress levels and institutional support provided to academic middle-managers during a significant time of turbulence and uncertainty within higher education. In order to capture data on the transition to online teaching and remote-based work and stress levels specifically related to the pandemic, new questions assessed the following: primary method of educational delivery prior to COVID-19, percentage of daily work activities done remote prior to and since COVID-19, and the level of satisfaction in how the institution transitioned to the online environment, which was surveyed in seven key areas: overall institutional support, quality of communication, training opportunities, practical guidelines or tips, personnel resources, quality of online tools for teaching and learning, and quality of online tools for connecting with others. In addition, the survey asked respondents to report how much their level of work-related and overall stress had increased since COVID-19.

As a reminder, the survey was disseminated for a period of one month from mid-April to mid-May 2020. Tables 10 and 11 provide a summary of the work-related impact of COVID-19; more specifically, primary method of delivery prior to COVID-19 and percentages of remote work pre- and postpandemic are outlined. Of the 156 participants who responded to the COVID-19-related questions, 71.2% described face-to-face/residential as their primary method of educational delivery prior to COVID-19 with an additional 17.8% describing their pre-COVID-19 primary method of delivery as a hybrid/blended model.

Table 10

Frequency and Percentage of Prepandemic Primary Method of Educational Delivery

Primary Delivery Method	*f*	%
Face-to-Face/Residential	116	71.2
Fully Online	4	2.5
Hybrid/Blended	29	17.8
Total valid responses	156	91.5
Not reported	14	8.5
Total	163	100.0

Note. Respondents were asked for the primary method of delivery; thus, categories were mutually exclusive.

Table 11 summarizes the percentage of work activities completed remotely and online prior to COVID-19 versus during the pandemic period between April and May 2020. The average percent of work completed remotely prior to COVID-19 was 16.7% with a range of zero to 74%. Since COVID-19, the average amount of remote work increased to 92% with a range of completing work remotely between 5% and 100% online.

Table 11

Mean, Range, and Standard Deviation of Remote-Based Work Prior and During Pandemic

Percentage of Remote-Based Work	*N*	Min	Max	*M*	*SD*
Prior to COVID-19 Pandemic	150	0.0	74.0	16.7	15.0
During the COVID-19 Pandemic	155	5.0	100.0	92.1	19.3
Total	150				

Table 12 provides a summary of responses surrounding the respondents' satisfaction with their institution's ability to transition into an online teaching, learning, and working environment. Participants were asked to rate their satisfaction in seven key transition areas based on a Likert-scale ranging from 1 = *Very Dissatisfied* to 5 = *Very Satisfied*. An option to select *Not Applicable* (*N/A*) was also provided in the event a respondent was not impacted by a certain key transition area. As indicated below, a majority of respondents were very or somewhat satisfied with their institution in each of the seven key areas of transition.

Table 12

Percentages of Institutional Satisfaction in Seven Key Transition Areas

Key Area	Very Satisfied (%)	Somewhat Satisfied (%)	Neither Satisfied nor Dissatisfied (%)	Somewhat Dissatisfied (%)	Very Dissatisfied (%)	N/A
Overall Institutional Support	55.8	30.8	5.1	7.1	1.3	0
Quality of Commun-ication	50.0	27.9	5.8	12.3	3.9	0
Training opportunities	48.1	25.0	10.9	10.9	3.2	1.9
Practical Guidelines or Tips	46.5	33.5	10.3	7.7	1.9	0
Personnel Resources	46.8	25.6	7.7	13.5	3.8	2.6
Quality of Online Tools for Teaching and Learning	53.2	28.8	8.3	6.4	1.3	1.9
Quality of Online Tools for Connecting with Others	67.3	21.8	4.5	4.5	0.6	1.3

Note. Percentages in each key area total 100.

Finally, participants assessed their level of work stress and overall stress since the onset of the COVID-19 pandemic in the United States. Each question asked "How much has your stress level at work (or overall) increased since COVID-19?", and respondents selected from a five-point Likert scale ranging from 1 = *Not at all* to 5 = *Increased Significantly*. As indicated in Table 13, approximately half (51.5%) of the respondents reported their work stress increased moderately or significantly since the beginning of the COVID-19 pandemic. When asked how much their overall stress had increased, slightly less than half (44.8%) reported a moderate or significant increase.

Table 13

Increase in Work Stress and Overall Stress Since COVID-19 Pandemic

Level of Stress	*f*	%
Work Stress		
Not at all	15	9.2
Increased Slightly	23	14.1
Increased Somewhat	34	20.9
Increased Moderately	46	28.2
Increased Significantly	38	23.3
Overall Stress		
Not at all	14	8.6
Increased Slightly	34	20.9
Increased Somewhat	34	20.9
Increased Moderately	42	25.8
Increased Significantly	31	19.0
Total valid responses	155	95.1
Not reported	8	4.9
Total	163	100.0

In summary, responses related to the COVID-19 pandemic indicated that most respondents' work environment and institutional climate were notably altered by moving to remote-based, online work. However, a majority were satisfied with their university's response

to the rapid shift. Furthermore, a majority of respondents (51.5%) indicated moderate to significant increases in work-related stress; however, fewer (44.8%) reported moderate to significant increases in overall stress.

Descriptive Statistics of Variables

Descriptive statistics for independent and dependent variables are presented in Table 14. I only excluded cases if data were missing from more than two items within the variable measurements. Thus, the sample size may vary due to missing minimal item responses.

Langer Mindfulness Scale (LMS-14). This sample appeared to report high scores of mindfulness as a whole (M = 82.05). As previously noted, LMS-14 scores range between 14 and 98. While the 14-item version is a relatively new iteration of the LMS, I found limited research reporting mean norms of the LMS-14 or the LMS-21 (prior version). However, Haas and Langer (2014) reported that LMS-14 scores lower than 76 indicated "low trait mindfulness" and scores equal to or above 76 indicated "high levels of trait mindfulness" (p. 26).

Predictive 6-Factor Resilience Scale (PR6-16). The mean score for this sample was 74.18, which is higher when compared with the authors' norms among employees in healthcare (M = 69.7), finance (M = 68.4), education (M = 69.1), and other industries not specified (M = 60.5; Rossouw & Rossouw, 2016). Additionally, the mean score is higher than employees from Australian organizations (N = 345, M = 69) as cited in a recent study (Rossouw et al., 2019) and participants in the Australian education and healthcare sectors when combined (N = 671, M = 65.2; Rossouw et al., 2017). However, the authors suggest that resilience scores may increase as one gets older with a slightly higher average (M = 70) among participants between the ages of 55 and 64, which is comparable to this study's sample. To date, no published study has provided comparable data for the United States nor the higher education sector.

Perceived Stress Scale (PSS-10). PSS-10 total scores range between zero and 40 with 0–13 considered low stress, 14–26 considered moderate stress, and 27–40 categorized as high perceived stress. As shown in Table 14, the mean score in this study was 16.09, an indication of moderate stress within this sample. Cohen (1994) provided normative data during a relatively economically stable period suggesting the general population at that time scored lower than the current study sample even when compared among certain demographics, such as females (*M* = 13.7), those between the ages of 55 and 64 (*M* = 11.9), and those identified as White (*M* = 12.8), Hispanic (*M* =14.0) or Black (*M* = 14.7). This finding may suggest that the COVID-19 pandemic and/or the rapid shift and unpredictability experienced in higher education may have influenced higher perceived stress scores. It is important to note that the reported mean in this study was also noticeably higher than the national average in 2009 (Cohen & Janicki-Deverts, 2012). Researchers surveyed a probability sample within the United States immediately following the 2008 recession and found that those within the general population who had an advanced degree (comparable to an academic middle manager) had a mean score of 14.65. In summary, the sample in this study reported more psychological stress than previously published among the general population.

Table 14

Descriptive Statistics for Independent and Dependent Variables

Variables	*N*	Min	Max	*M*	*SD*	Skewness	Kurtosis
Mindfulness (Independent)	155	53	98	82.05	8.78	-0.56	0.37
Resilience (Mediator)	157	50	97	74.18	9.03	-0.29	-0.17
Perceived Stress (Dependent)	152	4	37	16.09	6.69	-0.45	-0.08

Hypothesis Testing Assumptions

The following section addresses the assumptions: normality, linearity and homoscedasticity, and multicollinearity, that had to be met to test the hypotheses and perform linear and multiple regression analyses. Based on the findings, the deciding strategy for dealing with outliers is then discussed.

Normality. Assumptions for normality with the independent and dependent variables were met as the skewness and kurtosis values were between -1 and +1 (Table 14). Figures 3 to 5 illustrate the histogram for each of the variables.

Figure 3

Histogram of Mindfulness

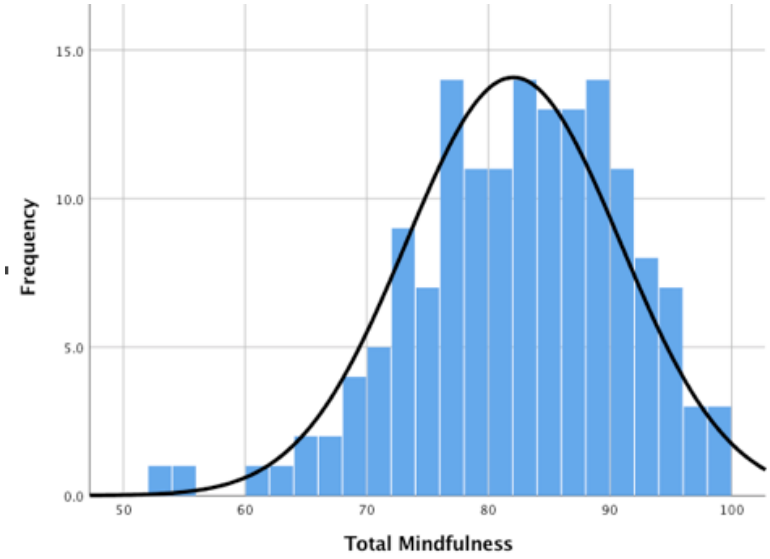


Figure 4

Histogram of Resilience

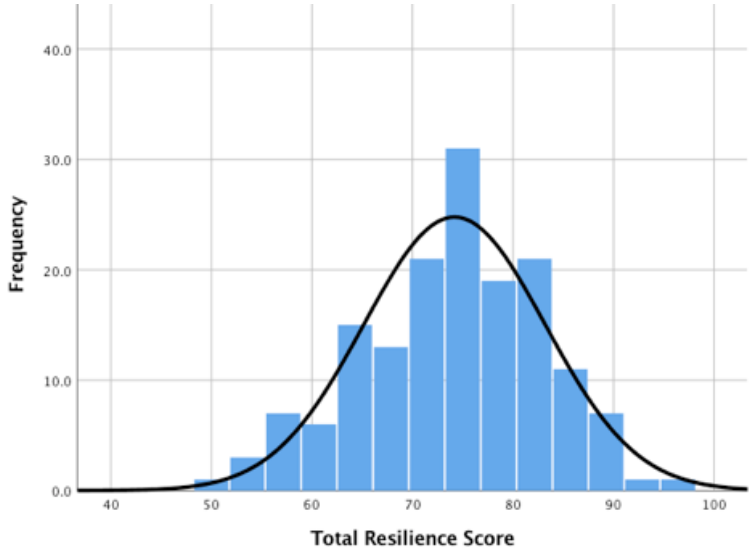
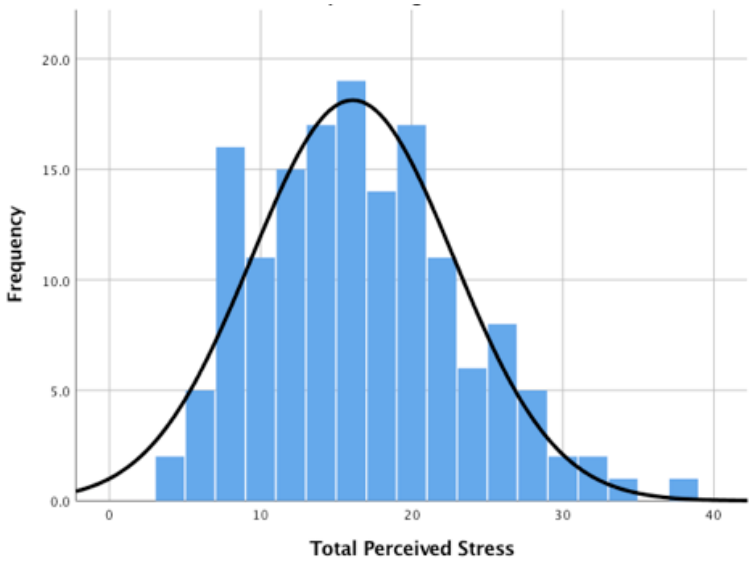


Figure 5

Histogram of Perceived Stress



I also conducted the Shapiro-Wilks test and it showed a statistically significant result for Total Mindfulness (p = .007) and Total Perceived Stress (p = .016) indicating the null hypothesis that assumed normal distribution was rejected. A nonsignificant result (p = .282) was found for Total Resilience. However, since the sample (N = 163) was a reasonably large sample size, review of the histograms in Figures 3 to 5 provide visual confirmation that the assessed variables had relatively normal distributions.

Linearity and Homoscedasticity. The following figures demonstrate the linearity and homoscedasticity when examining relationships among the variables. Figure 6 provides visual examination of the assumption of linearity by examining the normal probability (P-P) plot, in which observed points form a relatively straight diagonal line. The P-P plot demonstrated distributions that were close to normal even when factoring in the outliers. Figure 7 also confirmed that the assumption of homoscedasticity was met since the scatterplot forms a square-like shape when standardized residuals are equally distributed, and most scores are concentrated in the center.

Figure 6

Normal P-P Plot of Regression Standardized Residual: Dependent Variable

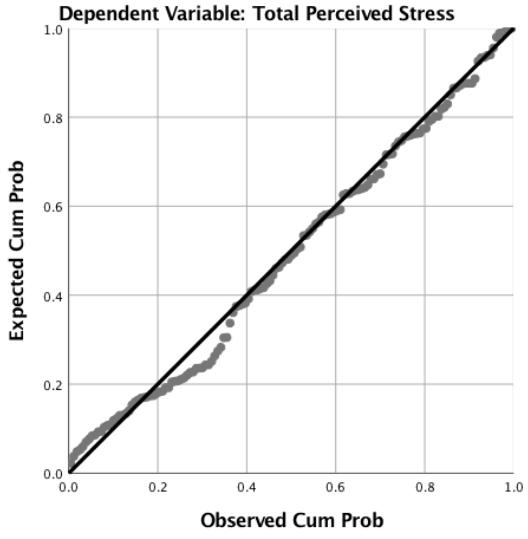
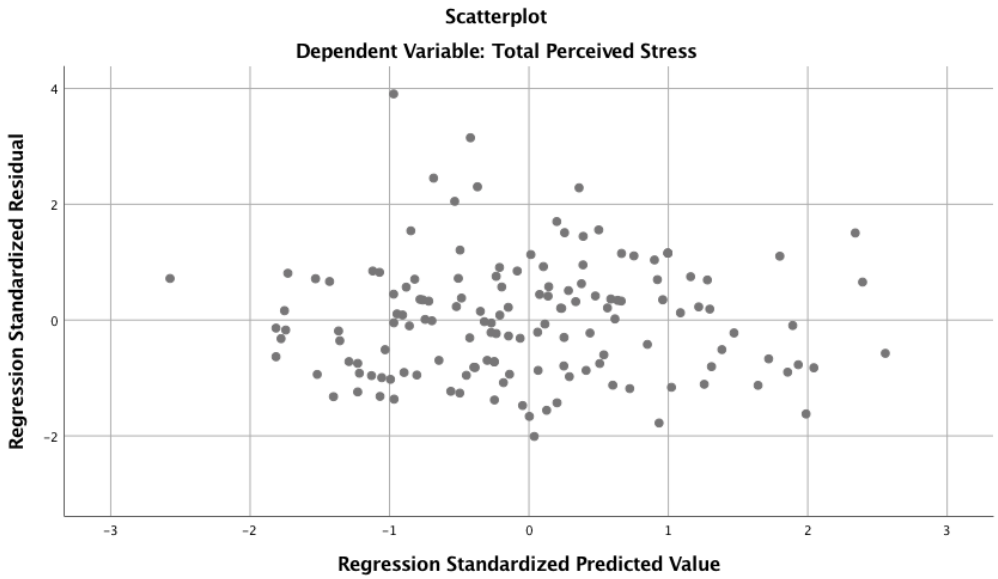


Figure 7

Scatterplot of the Standardized Residuals: Dependent Variable



Multicollinearity. Multicollinearity occurs in multiple regression analyses when the independent variables highly correlate with one another (Powers, 2010). Therefore, I conducted collinearity diagnostics as part of the multiple regression procedure. According to Pallant (2016), the variance inflation factor (VIF) should be computed and values above 10 indicate a concern for multicollinearity. As shown in Table 15, the VIF values were 1.28 and well below the threshold.

Table 15

Variance Inflation Factor (VIF)

Independent variables	Tolerance	VIF
Mindfulness (Independent)	.78	1.28
Resilience (Mediator)	.78	1.28

Note: The dependent variable was Perceived Stress.

Moreover, condition indices were examined to consider the level of dependency of the variables. According to Tabachnick and Fidell (2007), indices higher than 30 indicate concerns

for error in the regression model. Table 16 provides the summary of this statistic in which 23.1 was the highest metric and again, remained below the threshold for multicollinearity concerns.

Table 16

Condition Index

Dimension	Eigenvalue	Condition Index
1	2.99	1.00
2	0.01	19.85
3	0.01	23.06

Outliers. As with most social science research, outliers are expected and should be examined when deciding whether or not to trim the data (Field, 2018). Prior to conducting the inferential statistics in this study, I noted two outliers in mindfulness (case 69 and case 144; both very low), one outlier in resilience (case 15; very low), and two outliers in perceived stress (case 71 and case 87; both very high). At my discretion, I initially removed the five outliers from the dataset, and ran preliminary multiple regression analyses. Analyses were then conducted on the dataset including the outliers. Findings showed there was no difference in the levels of statistics computed between the two datasets, and assumptions for normality, linearity and homoscedasticity, and collinearity were still met. When the outliers remained in the dataset, visual examination of the scatterplot of standardized residuals (Figure 7) indicated some concern for outliers in the dataset. Hence, Mahalanobis distance was computed in SPSS using the regression model. The Mahalanobis distance within this dataset is 13.44 which is lower than the critical value, $\chi^2(2) = 13.82$, $p < .001$, according to Tabachnick and Fidell (2013). Furthermore, a review of Cook's distance indicated a maximum value of .093, which is below the critical value (1) as determined by Tabachnick and Fidell (2013). Therefore, it was determined that no outliers would be removed from the dataset ($N = 163$).

Hypothesis Testing

This study was guided by the following research questions and hypotheses.

Q1. How does socio-cognitive mindfulness predict perceived stress levels among academic middle managers in higher education?

H1$_0$. Socio-cognitive mindfulness does not predict perceived stress among academic middle managers in higher education at a statistically significant level.

H1$_A$. Socio-cognitive mindfulness predicts perceived stress among academic middle managers in higher education at a statistically significant level, with higher levels of socio-cognitive mindfulness predicting lower levels of perceived stress.

Q2. How does resilience mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education?

H2$_0$. Resilience does not mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education at a statistically significant level.

H2$_A$. The relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education is mediated by resilience at a statistically significant level.

Thoemmes et al. (2010) outlined the three regression equations required to conduct a single mediator model where *i* represents intercepts, *e* represents error terms, and *X*, *Y*, and *M* are the independent, dependent, and mediator variables, respectively.

Equation 1 : $Y = i_1 + cX + e_1$

Equation 2 : $Y = i_2 + c'X + bM + e_2$

Equation 3: $M = i_3 + aX + e_3$

Mediation Assumptions

Furthermore, Baron and Kenny (1986) established four criteria to establish mediation. Based on the above hypotheses in this study, the following four criteria should be met: (a) when socio-cognitive mindfulness (independent) is significantly associated with perceived stress (dependent); (b) when socio-cognitive mindfulness (independent) is significantly associated with resilience (mediator); (c) when resilience (mediator) is significantly associated with perceived stress (dependent), after controlling for socio-cognitive mindfulness (independent); and (d) when the significant relationship between socio-cognitive mindfulness (independent) and perceived stress (dependent) is significantly diminished when resilience (mediator) is controlled.

As previously noted, 172 participants responded to the online survey that included the following scales: the LMS-14), the PR6-16), and the PSS-10. Final viable participant responses *(N* = 163) were examined for outliers, normalcy, linearity and homoscedasticity, and collinearity. Descriptive statistics were as follows: socio-cognitive mindfulness (*M* = 82.05, *SD* = 8.78, 95% CI [80.65, 83.00], resilience (*M* = 74.18, *SD* = 9.03, 95% CI [72.75, 75.00], and perceived stress (*M* = 16.09, *SD* = 6.69, 95% CI [15.02, 17.16]. It is important to note all analyses utilized pairwise comparison.

To test both research hypotheses and in light of Baron and Kenny's (1986) four criteria, I performed three separate linear regression analyses on the dataset (Steps 1a, 2b, 2c) followed by a multiple regression analysis (Step 2d). Table 17 provides a summary of the steps taken to test both research questions. The numerical form assigned to the step describes the research question tested and the alphabetical form delineates each of the four criteria.

Table 17

Variables and Statistical Tests in a Single Mediator Model

Steps	Dependent Variable	Independent Variable	Statistical Test
1a	Perceived Stress	Mindfulness	Linear Regression
2b	Resilience	Mindfulness	Linear Regression
2c	Perceived Stress	Resilience	Linear Regression
2d	Perceived Stress	Mindfulness, Resilience	Multiple Regression

The first research question and corresponding hypothesis are provided below.

Q1. How does socio-cognitive mindfulness predict perceived stress levels among academic middle managers in higher education?

$H1_0$. Socio-cognitive mindfulness does not predict perceived stress among academic middle managers in higher education at a statistically significant level.

$H1_A$. Socio-cognitive mindfulness predicts perceived stress among academic middle managers in higher education at a statistically significant level, with higher levels of socio-cognitive mindfulness predicting lower levels of perceived stress.

Thus, I performed a linear regression in SPSS with mindfulness as the independent variable and the dependent variable as perceived stress. Results indicated a statistically significant inverse relationship existed between mindfulness and perceived stress: $F(1, 145) = 8.74$, *beta* = -.24, $p < .004$). More specifically, as mindfulness scores increased, perceived stress scores decreased. Therefore, the null hypothesis was rejected, and mindfulness was found to be a significant predictor of perceived stress. This is the first step in establishing if resilience mediates the relationship between mindfulness and perceived stress; thus, confirmation of this finding allowed me to progress and test the next research question.

Q2. How does resilience mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle-managers in higher education?

$H2_0$. Resilience does not mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education at a statistically significant level.

$H2_A$. The relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education is mediated by resilience at a statistically significant level.

Using a linear model, the independent variable of mindfulness and the dependent variable of perceived stress were entered into SPSS and I selected regression as the most appropriate statistical test (Step 1a). As previously mentioned, results indicated a statistically significant inverse relationship between mindfulness and perceived stress: $F(1, 145) = 8.74$, *beta* = -.24, $p < .004$. To examine the relationship between the independent and the mediator (Step 2b), the independent variable of mindfulness and the dependent variable of resilience were entered into SPSS and tested using regression. Results indicated that a statistically significant relationship existed between mindfulness and resilience: $F(1, 149) = 42.17$, *beta* = .47, $p < .000$. Furthermore, as mindfulness scores increased, so did resilience scores.

To examine the relationship between the mediator and the dependent variables (Step 2c), the independent variable of resilience and the dependent variable of perceived stress were entered into SPSS and linear regression was selected. Results indicated that a statistically significant relationship existed between resilience and perceived stress: $F(1, 147) = 33.48$, *beta* = -.43, $p < .000$. Furthermore, perceived stress scores decreased as resilience scores increased.

Since the first hypothesis was confirmed and statistically significant relationships were found in the first three steps, multiple regression analysis was the appropriate next step (MacKinnon et al., 2007). I used multiple regression to assess the ability of the independent and the mediator (mindfulness and resilience, respectively) to predict levels of perceived stress (Step 2d). Pallant (2016) asserted that once assumptions are met, multiple regression provides "an indication of the relative contribution of each independent variable" (p. 159). Results indicated resilience mediated a significant relationship between mindfulness and perceived stress, and the total variance explained by the mediation model was 18.7%, $R = .433$, $R^2 = .187$, $F(2, 144) = 16.58$, $p < .000$. Of the two independent variables, resilience provided the largest unique contribution (*beta* = -.41, $p < .000$) while mindfulness did not make a significant contribution (*beta* = -.05, $p < .59$). Thus, mindfulness no longer significantly predicted stress after entering resilience in the equation. Therefore, resilience fully mediated the relationship between mindfulness and stress, and the null hypothesis was rejected in favor of the second hypothesis.

Table 18 displays the mediation model summary of the linear and multiple regression analyses and subsequent statistics examined to test the final research question.

Table 18

Summary of Regression Analyses Used to Evaluate Research Question 2

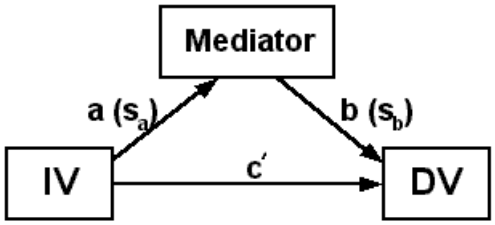
Steps	Independent Variable	Dependent Variable	*R*	R^2	*SE*	*F*	*df*	*beta*	Sig.
1a	Mindfulness	Perceived Stress	.24	.06	6.52	8.74	1	-.24	.004
2b	Mindfulness	Resilience	.47	.22	7.80	42.17	1	.47	.000
2c	Resilience	Perceived Stress	.43	.19	6.06	33.48	1	-.43	.000
2d	Mindfulness, Resilience	Perceived Stress	.43	.18	6.07	16.58	2	-.05 -.41	.000

Note. $N = 163$

Moreover, I conducted the Sobel test to determine if the full mediation effect of resilience on the relationship between mindfulness and perceived stress was statistically significant (Sobel, 1982). Since linear and multiple regression analyses do not directly calculate the significance of the mediation or indirect effect, Baron and Kenny (1986) recommended the Sobel test as one method for further statistical analysis because it tests the statistical significance of the mediation model as a whole after accounting for significance among the variable relationships. In sum, the Sobel test computes confidence intervals for the estimates of indirect effects on the dependent variable (Sobel, 1982) and examines the mediation model by identifying if the independent variable has an indirect effect, fully or partially mediated through another variable, on the dependent variable (Allen, 2017). I chose this particular statistical test for this study because the sample size in this study was considered relatively large (N = 163) for a single mediator model. Statisticians suggested that with larger samples, the Sobel test may have less statistical power, and thus, may be considered more conservative than bootstrapping when further examining a multiple regression analysis (Baron & Kenny, 1986; Sobel, 1982). Figure 8 outlines the visual representation of the Sobel test calculation using a single mediator model when *a*, *b*, and *c* are path coefficients and the *s* values in parentheses are standard errors (Preacher & Leonardelli, n.d.).

Figure 8

Illustration of the Sobel Test Equation in Mediation



Note. This figure demonstrates the calculation of the Sobel test where *a* = unstandardized regression coefficient for the association between the independent and mediator; s_a= the standard error of *a*; *b* = raw coefficient for the association between the mediator and the dependent variable (when the independent variable is also the independent of the dependent variable; and s_b= the standard error of *b*. From "Calculation for the Sobel test: An interactive calculation tool for mediation tests" by K. J. Preacher and G. J. Leonardelli, n.d. (http://www.quantpsy.org/sobel/sobel.htm). Copyright 2010–2020 by Quantpsy. Reprinted with permission.

I utilized the open-source online Sobel test calculation tool cited in Figure 8. For the mediation effect of resilience, *B* (unstandardized beta) for path *a* was .48 (Step 2b), the standard error for path *a* was .074; the *B* for path *b* was -.303 (Step 2c); and the standard error for path *b* was .063. Upon calculation, the critical ratio, *z-statistic*, which tests whether the indirect effect is significantly different from zero, and thus, rejecting the null hypothesis (Preacher & Leonardelli, n.d.). In terms of the full mediation of resilience on the relationship between socio-cognitive mindfulness and perceived stress, the Sobel *z-statistic* was -3.87 ($p < .000$), which indicated the full mediation effect of resilience is statistically significant for this sample of academic middle-managers in higher education.

Summary of Findings

This study examined how socio-cognitive mindfulness predicted perceived stress among academic middle-managers in higher education, and if the relationship between mindfulness and stress was mediated by resilience. For the purposes of this study, socio-cognitive mindfulness was defined as a cognitive style of mindfulness that promotes seeking new perspectives (novelty-seeking), facilitating creative activity (novelty-producing), and engaging with the current situation and/or moment (Langer, 2014). Resilience was defined as the psychological skills necessary to manage uncertainty and enhance adaptability, and the measurement used also considered the factor of health into the operationalization of resilience (Rossouw & Rossouw, 2016). Perceived stress, the dependent variable, was defined as the cognitive appraisal, or perception, of stress. I tested two research questions using linear and multiple regression analyses after all assumptions were met. Findings led to rejecting the null hypotheses for both of the stated research questions. Results indicated there was a statistically significant inverse relationship between socio-cognitive mindfulness and perceived stress among academic middle-managers in higher education, and the total variance explained by the mediation model was 18.7%. In addition, the relationship between socio-cognitive mindfulness and perceived stress among academic middle-managers in higher education was fully mediated by resilience. Further statistical testing, using the Sobel test, confirmed statistical significance within the mediation model. As noted previously, no study to date has examined the specific conceptualizations of socio-cognitive mindfulness (as measured by the LMS-14), resilience (as measured by the PR6-16) and perceived stress (as measured by the PSS-10) in any population.

Chapter 4 provided an overview of the data and the descriptive and inferential statistics used to conduct linear and multiple regression analyses and test the two research questions. I

explained the descriptive statistics of the respondent characteristics and each of the three variables. Procedures for handling missing data and outliers were addressed. Assumptions of multiple-regression analysis including, normality, linearity and homoscedasticity, and multicollinearity analysis were inspected and presented. Finally, I tested the hypotheses based on the proposed mediation model, and rejected the null hypothesis for each research question. The study findings indicated a statistically significant inverse relationship between socio-cognitive mindfulness and perceived stress and the relationship was fully mediated by resilience. Thus, this study supported the importance of socio-cognitive mindfulness and resilience in reducing perceived stress. Despite being conducted amid the COVID-19 pandemic, this study extends further research on the importance of enhancing mindfulness by building resilience to reduce stress. These findings are particularly applicable given the disruptive and turbulent period currently experienced in higher education.

Chapter 5 discusses how the results compare and extend previous research findings. Implications and recommendations for academic middle-managers, higher education institutions, and future research on organizational leadership are also addressed.

Chapter 5: Discussion, Conclusions, and Recommendations

Faculty, staff, and administrators in higher education have experienced rising levels of stress due to an increasingly turbulent environment amid constant change and uncertainty (Horvath, 2016; LeBlanc, 2018; Shin & Jung, 2014; Vilkinas & Cartan, 2015). This is especially true for academic middle managers, who experience increasingly high demands and significant stressors in the ever-changing landscape of higher education (Armstrong & Woloshyn, 2017; Floyd, 2016). Most research that addresses stress among academic middle managers has emphasized the need for additional professional development training and technical support, rather than adaptive support (Pepper & Giles, 2015; Preston & Floyd, 2016). However, emerging research has provided promising evidence of the positive effects of mindfulness in reducing stress, enhancing resilience, and subsequently, improving job-related outcomes (Kemper & Khirallah, 2015; Lomas et al., 2017; Schussler et al., 2018).

The connection between Eastern mindfulness and stress has been well-supported in the literature (Baer et al., 2012; Wasylkiw et al., 2015), and Eastern mindfulness-based interventions are positively correlated with personal and organizational resilience (Schussler et al., 2018). Resilience has been found to predict perceived lower stress levels (Lebares et al., 2018), and is related to the capacity to adapt to stress in the midst of adversity (Cathomas et al., 2019; Shi et al., 2015). Despite the recent rise in mindfulness scholarship from the Eastern perspective (Chin et al., 2019; Montero-Marin et al., 2015; Shi et al., 2015), there is a dearth of literature on the relationship between socio-cognitive mindfulness—the Western perspective—resilience, and stress. Although Langer (2005) theorized that socio-cognitive mindfulness influences stress, it is unclear whether this type of mindfulness impacts stress directly or if the relationship between

mindfulness and stress is mediated by resilience. No study to date has explored the relationship between socio-cognitive mindfulness, resilience, and stress.

This quantitative correlational study aimed to answer these research questions:

Q1. How does socio-cognitive mindfulness predict perceived stress levels among academic middle managers in higher education?

Q2. How does resilience mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education?

I executed the following design to conduct this study. The population consisted of academic middle managers within four-year U.S. institutions of higher education, department chairs, associate/assistant deans, and deans. The final sample consisted of 163 participants who responded to the email invitation and completed an online survey. The independent variables were socio-cognitive mindfulness (predictor) and resilience (mediator) and were measured using the LMS (Pirson et al., 2018) and the PR6-16 (Rossouw & Rossouw, 2016), respectively. The dependent variable, perceived stress, was measured by the PSS-10 (Cohen, 1994). Additional institutional, position-level, and personal demographics were captured. I also included supplemental questions related to COVID-19, the novel coronavirus; these questions related to the satisfaction of the institution's response to transitioning to an online teaching, learning, and working environment as well as work stress and overall stress levels amid the pandemic. Findings indicated that socio-cognitive mindfulness significantly predicted perceived stress, and resilience fully mediated the relationship between mindfulness and stress. This final chapter addresses the study's limitations, summarizes the findings, considers implications, and applies the findings based on previous literature. Also, recommendations for practice and future research are presented.

Discussion of the Findings

I conducted analyses to determine how mindfulness predicts perceived stress and if resilience mediates the relationship between socio-cognitive mindfulness and perceived stress. The following section outlines how the findings from each research question aligned with past research, differed from previous scholarship, and extended research on the relationship between socio-cognitive mindfulness, resilience, and perceived stress. As previously noted, there is a dearth of literature on connections between Western mindfulness, resilience, and stress. Prior scholarship has primarily focused on resilience, stress, and/or Eastern mindfulness and their relationships to other outcomes associated with well-being.

Mindfulness as a Predictor of Perceived Stress

The first research question and corresponding hypotheses were:

Q1. How does socio-cognitive mindfulness predict perceived stress levels among academic middle managers in higher education?

$H1_0$. Socio-cognitive mindfulness does not predict perceived stress among academic middle managers in higher education at a statistically significant level.

$H1_A$. Socio-cognitive mindfulness predicts perceived stress among academic middle managers in higher education at a statistically significant level, with higher levels of socio-cognitive mindfulness predicting lower levels of perceived stress.

In this study, socio-cognitive mindfulness was found to be a statistically significant predictor of perceived stress; thus, the null hypothesis was rejected, and the alternative hypothesis was confirmed.

Those with higher levels of socio-cognitive mindfulness consider the dynamic environment in which social relationships and organizational contexts are examined and

appraised (Langer & Moldoveanu, 2000). Thus, academic middle managers may naturally exhibit more mindfulness, which led them to self-select into both academia and scholarly activity and eventually into a leadership role in academia. It is also possible that the constant navigation of demands and challenges experienced as a middle manager in academia results in higher levels of socio-cognitive mindfulness and that the uncertainty and ambiguity experienced in their role may exacerbate perceived stress.

Langer (2005) hypothesized that when one views uncertainty as universal and employs socio-cognitive mindfulness to do so, stress may be diminished. This study found that higher socio-cognitive mindfulness predicted lower stress; thus, the findings support their hypothesis. Langer (2005) also asserted that thoughts of incompetence, rather than viewing a situation as novel during uncertainty, may influence stressful thinking. Interestingly, the study participants presented with higher levels of perceived stress when compared with general population norms from previous studies (Cohen, 1994; Cohen & Janicki-Deverts, 2012). This assertion aligns with the increased stress experienced in higher education over the past decade in particular (Horvath, 2016; LeBlanc, 2018; Shin & Jung, 2014; Vilkinas & Cartan, 2015). Hence, it is feasible that a middle-management position in academia influences how leaders perceive stress.

This study may also provide evidence that perceived stress increased remarkably within this population of middle-managers due to the COVID-19 pandemic. More specifically, uncertainty may have also been exacerbated amid a novel coronavirus pandemic as institutions transitioned to a remote work environment, which may have led to more perceived stress. As evidenced in other COVID-19-related stress studies, the general population also reported increased stress around the same time I collected these data. According to the APA (2020) “Stress in the Time of COVID-19” report, stress related to the economy increased from 46% in

2019 to 70% in May 2020, and work-related stress increased from 64% in 2019 to 70% in May 2020. Keeter (2020) revealed approximately one-third of Americans reported experiencing high levels of psychological distress in March and April 2020. Additionally, the supplemental questions related to increased stress levels related to COVID-19 indicated that a majority of respondents reported a moderate or significant increase in work stress. Accordingly, it is feasible to attribute the higher levels of perceived stress to the unprecedented nature of the COVID-19 pandemic and its impact on the unpredictability in respondents' personal and professional lives. Again, I collected participants' responses during the first two months of extreme social distancing (April–May 2020) in the United States when a significant majority of the nation remained home-bound and thus, disruptions in the health, economic, and social fabric of the nation were unfolding and as the novelty surrounding the short- and long-term effects of the coronavirus remained uncertain.

Results also indicated the mean score of socio-cognitive mindfulness within the sample was higher than normal (Haas & Langer, 2014). This finding may be for several reasons, including the possibility that these individuals had higher levels of mindfulness and thus, sought or self-selected a novelty-producing environment like academia. It is also possible that higher levels of mindfulness may be more prominent among this population in general as middle-managers constantly adapt and navigate change within the turbulent environment of higher education. However, the finding may also be attributed to the impact of the novel coronavirus, which likely thrust these participants into novelty-seeking and novelty-producing cognitive patterns of flexibility, creativity, and engagement amid unprecedented organizational and societal change and uncertainty. Within this study sample, 71.2% identified face-to-face/residential interactions as their institution's primary method of educational delivery before

the COVID-19 pandemic. Also, the average amount of remote-based work increased from 16.7% to 92% since the onset of the COVID-19 pandemic in the United States. Based on this descriptive data, it is evident that a majority of participants were challenged with navigating a completely novel work environment.

Carson and Langer (2006) contended that higher levels of socio-cognitive mindfulness increased cognitive flexibility and adaptability to new environments in meaningful ways. Moreover, Langer's (2005) hypothesized relationship between socio-cognitive mindfulness and stress emphasized that well-being would improve if one accepted uncertainty as universal and perceived situations or contexts as novel. Hence, the intentional search for novelty and the notion of the power of uncertainty, both cornerstones of the socio-cognitive approach to mindfulness, diminish stress. Similarly, Rupert and Dorociak (2019) reported that lower perceived stress predicted better personal and professional well-being. In this study, higher levels of socio-cognitive mindfulness predicted lower levels of perceived stress, which support Langer's (2005) claims that: 1) employing socio-cognitive mindfulness might lead to more perceived control, and thus, feelings of competence and comfortability with uncertainty, and 2) this type of mindfulness may result in less stress.

Crum and Lyddy (2014) supported Langer's connection between socio-cognitive mindfulness and stress and asserted cognitive mechanisms trigger one to consider stress mindfully, and thus, improve the effects on health, mental health, and well-being (Crum & Lyddy, 2014). The findings of this study relate to prior assertions and link to other studies that found lower perceived stress positively influenced health and mental health (Cohen & Janicki-Deverts, 2012; Cohen & Williamson, 1998) and well-being (Rupert & Dorociak, 2019). Furthermore, Pagnini and Langer (2015) highlighted socio-cognitive mindfulness as a form of

reappraisal. In summary, this finding not only promotes prior scholarship claiming socio-cognitive mindfulness may employ the reframing of a stressor as more of a healthy challenge rather than an overwhelming crisis (McGonigal, 2015), but subsequently suggests higher levels of mindfulness correlate with lower levels of perceived stress.

More broadly, the findings of this study also align with Lazarus's (1966, 1977) theory on the complex nature of stress, which emphasized the individual's perception of stress based on the "mediating effects of appraisal and coping in the stress process" (Lazarus, 1993, p. 23). Additionally, this study augments Cohen et al.'s (1983) multidimensional view of stress as a cognitive reframing process that shifts the attachment to novel challenge rather than formidable crisis, and accordingly, perceived stress is adaptive and state-like in nature. This study extends further support of a connection between the perception and appraisal of stress by employing socio-cognitive mindfulness, and thus, prompting cognitive flexibility by considering the context of the stressor as novel. Ultimately, the findings promote the role of socio-cognitive mindfulness in positively influencing the perception of stress. In sum, the findings of this dissertation study confirm Langer's (2005) hypothesized link between socio-cognitive mindfulness and stress, and support a connection between this type of mindfulness and Lazarus's (1966) theory on stress appraisal and coping, as well as Cohen's (1977) conceptualization that cognitive appraisal and flexibility lead to less perceived stress.

As noted in the literature review of this dissertation manuscript, there are distinctions between Western socio-cognitive mindfulness and Eastern meditative mindfulness, but there are also similarities. Some researchers have emphasized the two types of mindfulness are "mutually supportive" (Brown et al., 2007, p. 213). In fact, Langer deduced that meditative mindfulness practice may elicit cognitive flexibility and mindful thinking within context, but it is not required

(Harvard Institute of Coaching, 2015). Hence, both approaches, when combined, may provide a more multidimensional and holistic understanding of mindfulness. This study's findings on socio-cognitive mindfulness extends upon previous research demonstrating the benefits of Eastern mindfulness on perceived stress.

Olpin and Hesson (2013) reinforced the holistic nature of stress and defined stress as a mind–body connection (as cited in Stickle & Scott, 2016), which is also supported in neuroscience literature on Eastern mindfulness and stress (Hölzel et al., 2010; Lazar et al., 2013). Jha et al. (2017) studied military members preparing for deployment, identified as a high-stress cohort, and found significant decreases in attentional performance lapses and mind wandering when participants reported high levels of participation in a mindfulness meditative practice compared to low practice and control groups. Similarly, Chin et al. (2019) conducted a randomized controlled trial with a stressed cohort of adults and evaluated the effectiveness of a meditative mindfulness-based intervention (MBI). MBIs are any intervention that incorporates the Eastern perspective of mindfulness; these may include mindfulness-based stress reduction programs but are not exclusive to MBSR (Lomas et al., 2017). Their findings indicated those who participated in a more intense, eight-week intervention reported a significant reduction in feelings of daily stress. Wasylkiw et al. (2015) also found a mindfulness-based intervention for leaders increased Eastern mindfulness and decreased perceived stress, which also led to subordinates' direct reports of positive change in leadership effectiveness.

Furthermore, Lomas et al. (2017) conducted a systematic review on the impact of MBIs in the workplace. They found mindfulness interventions reduced mental health issues, including stress, increased outcomes related to occupational well-being, and in most cases, enhanced aspects of job performance. In light of these studies, it is important to note socio-cognitive

mindfulness does not require the same level of intensive practice as meditation (Langer, 2014). Thus, the findings of this study suggest that academic middle-managers who are resistant to, critical of, or cannot otherwise participate in mediation training or intensive MBIs may still cultivate the benefits of reduced stress via socio-cognitive mindfulness.

Resilience as a Mediator of Socio-Cognitive Mindfulness and Stress

The second research question is addressed in the following section with comparisons and contrasts to existing literature. Again, most scholarship that examines these three variables focuses solely on the Eastern perspective of mindfulness; therefore, most studies in this section address meditation when discussing mindfulness.

Q2. How does resilience mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education?

$H2_0$. Resilience does not mediate the relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education at a statistically significant level.

$H2_A$. The relationship between socio-cognitive mindfulness and perceived stress among academic middle managers in higher education is mediated by resilience at a statistically significant level.

The findings indicated resilience fully mediated the relationship between mindfulness and perceived stress at a statistically significant level. Thus, the second null hypothesis was rejected in favor of the alternative hypothesis.

These findings suggest resilience may be a mediating mechanism that explains the relationship between socio-cognitive mindfulness and perceived stress levels among academic middle managers in an exceptionally turbulent climate. Research on other conceptualizations of

resilience and its relationship to stress is well-documented (Aiena et al., 2015; Fletcher & Sarkar, 2013; Shi et al., 2015), especially in a personal crisis or during organizational adversity (Kahn et al., 2018; Sutcliffe & Vogus, 2003). However, I sought to explore resilience from a neurobiological framework set forth by Rossouw and Rossouw (2016), in which they hypothesized links between neuroplasticity, psychological resilience, and physical health. This conceptualization also highlighted the essential need for resilience when the ability to thrive in uncertainty and cope with ambiguity amid adversity is paramount. Researchers have previously found higher levels of resilience positively influenced job satisfaction (Rossouw et al., 2017) and may aid in stress management (Rossouw et al., 2019). Therefore, the findings of this study support the notion that higher resilience levels may actually explain the relationship between socio-cognitive mindfulness and perceived stress as mindfulness builds resilience.

Overall, there is a notable lack of agreement on how to define resilience, which makes it difficult to compare and contrast this study's findings with prior scholarship. Most research on resilience typically considers a more clinical approach (Connor & Davidson, 2003; Wagnild & Young, 1993; Cathomas et al., 2019) with an emphasis on trauma or *bouncing back* from hardship or crisis. Prior studies have supported the findings that the clinical conceptualizations of resilience may mediate relationships between positive constructs of well-being and stress. For example, researchers found that Wagnild and Young's (1993) definition of resilience: "adaptively overcoming stress and adversity while maintaining normal psychological and physical functioning" (Shi et al., 2015, p. 2), partially mediated the relationship between perceived stress and life satisfaction. Although prior literature has identified a relationship between resilience and perceived stress (Nakamura & Tsong, 2019; Wilks & Croom, 2008), no research to date has discussed how the conceptualization of resilience in this study may be

related to mindfulness or explained the relationship between mindfulness and perceived stress by acting as a mediator. Nor do most organizational scholars explicitly address resilience in leaders in the midst of a significant stressor or crisis like a global health pandemic.

Rossouw (2019) defined resilience as "advancing despite adversity" (para. 1) as opposed to the more common clinical terminology of *bouncing back*. Interestingly, the mean score for resilience found in this study was higher than in prior studies (Rossouw & Rossouw, 2016; Rossouw et al., 2017; Rossouw et al., 2019). It is possible this finding supports the likelihood that academic middle-managers may tend to be more resilient or they have built resilience as they have adapted and advanced despite the turbulence in higher education. Higher resilience levels may be attributed to the possibility that participants were harnessing more resilience amid the response to the pandemic; hence, it is feasible that the resilience measurement I used captured this dynamic process of adaptation. This study suggests this particular conceptualization may be especially beneficial to leaders in higher education in which adaptation in adversity and within a volatile environment paramount; this is especially critical to consider as this population prepares for the post-COVID-19 climate and the short- and long-term impact on institutions.

Rossouw (2018) asserted building skills in resilience can improve a person's ability to choose positive coping skills rather than maladaptive behaviors. Thus, this study supports the idea that socio-cognitive mindfulness may be a positive coping skill to choose when amplifying resilience even amid difficulty; hence, boosting resilience may be considered a proactive rather than a reactive process of bouncing back after adversity. Socio-cognitive mindfulness is deemed a form of reappraisal (Pagnini & Langer, 2015) that may be cultivated to question and challenge one's beliefs, prior assumptions, or perspectives of self and others. Langer et al. (2009) stated mindful thinking solicits the question, "How else might this be understood?" and from many

different perspectives; thus, the more interpretations, the more novel the approach, then the more one becomes comfortable with uncertainty. Since the authors of the PR6 defined the concept as "advancing despite adversity" (Rossouw, 2019, para. 1), it is also feasible that participants in this study employed more cognitive flexibility via socio-cognitive mindfulness to maintain momentum within their leadership role during an unprecedented period of intense ambiguity. This study may support the notion that when higher levels of socio-cognitive mindfulness were elicited, participants simultaneously garnered higher levels resilience despite uncertainty, although perceived stress scores were higher than normal. This interpretation also supports the emerging view of resilience as a mediating mechanism rather than the more clinical approach, which views resilience as an outcome after bouncing back from a specific event. The catapulting nature of this forced resilience may explain how resilience fully mediated the relationship between socio-cognitive mindfulness and perceived stress.

Langer (2014) asserted socio-cognitive mindfulness engages one in "continuous momentum" (p. 199), and Rossouw (2018) defined momentum as the "tendency to be open to new challenges, being willing to take on tasks, and a sense of forward movement that prevents them from becoming stagnant and defensive" (p. 47). They also adduced that a style of approaching the challenge, rather than avoiding it, especially during adverse circumstances, may imply positive momentum and healthy adaptation (Rossouw & Rossouw, 2016). Thus, socio-cognitive mindfulness may do more than build resilience by allowing one to draw from their existing resilience resources and generate the momentum required to approach, rather than avoid, a novel situation.

While it is reasonable to conclude that higher levels of socio-cognitive mindfulness and resilience in this study contributed to the academic middle-managers' natural ability to question

and challenge preconceived notions of how academia and institutions function and advance and adapt accordingly, it is also possible that higher levels were exacerbated by the experience of a novel coronavirus pandemic in which personal, social, professional, and economic conditions were challenged by uncertainty and unpredictability and required adaptation. Likewise, higher levels of socio-cognitive mindfulness and resilience may have been attributed to a tendency for highly mindful and resilient individuals to be in these middle management roles, or it may contribute to a theoretical connection in which socio-cognitive mindfulness promoted cognitive flexibility in terms of novelty-seeking and novelty-producing, and in turn, built higher levels of resilience through the lens of "advancing despite adversity" (Rossouw, 2019, para. 1). These are similar explanations that address the impact of these concepts on perceived stress. Namely, although higher socio-cognitive mindfulness predicted lower perceived stress, stress was still relatively high given the nature of when data was collected.

In essence, applying socio-cognitive mindfulness strategies in an uncertain or adverse situation may not only raise resilience levels but also garner existing positive coping strategies to build capacity and persevere in times of extreme ambiguity and turbulence. This assertion aligns with prior conceptualizations that categorize resilience as a dynamic process (Luthar, Ciccheitti, et al., 2000) or motivational force (Richardson, 2002) that positively adapts in an effort to maintain psychological equilibrium (Bonanno, 2004) rather than the popularized clinical form of resilience that emphasizes the ability to overcome, recover, or bounce back from a stressful or adverse event. Moreover, Christman and McClellan (2012) summarized the literature by explaining that "most scholars view resilience as something that permits individuals to develop patience, tolerance, responsibility, compassion, determination, and risk-taking" (p. 650). This study contributed to the notion that resilience may also influence stress by acting as the mediator

between socio-cognitive mindfulness and perceived stress. Hence, practical strategies to build resilience should steer leaders towards practicing higher levels of self-awareness, self-reflection, and self-regulation and adjust behavior and cognitive patterns accordingly and as stressors fluctuate (Cseh et al., 2013; Heslin & Keating, 2016; Yeager & Dweck, 2012) via interventions in socio-cognitive mindfulness.

This is the first study to examine the Western approach to mindfulness with perceived stress and an emerging conceptualization of neurobiological resilience. While there is a dearth of research that addresses socio-cognitive mindfulness and its relation to resilience and stress, there is promising research on the effects of Eastern mindfulness interventions on these concepts. The findings of this dissertation study extend upon the already existing empirical research on Eastern concepts of mindfulness, other definitions of resilience, and stress.

Other conceptualizations of resilience and Eastern mindfulness perspectives positively relate to well-being, health, and mental health outcomes (Keye & Pidgeon, 2013; Smith, 2018), including the perception of stress (Lebares et al., 2018; Shi et al., 2015). As previously noted, Shi et al. (2015) reported that higher levels of life satisfaction and resilience negatively correlated with perceived stress scores. They also hypothesized resilience as the mediating variable between life satisfaction and perceived stress and found partial mediation within their conceptual model. Roche et al. (2014) proposed that since resilience and mindfulness have been linked to positive outcomes, their interaction and dependence on one another may be an essential aspect to examine further. Tu (2019) found meditative mindfulness and resilience were both important predictors of burnout. Similarly, Lebares et al. (2018) examined the associations between burnout, perceived stress, distress, dispositional mindfulness, and trait resilience. Results indicated those who scored higher on dispositional mindfulness and trait resilience had lower

levels of perceived stress, burnout, and distress symptoms. The authors purported that perceived stress levels and health/mental health outcomes were partially linked and suggested Eastern mindfulness interventions may enhance the ability to build resilience. Schussler et al. (2018) noted in their qualitative study that a meditative MBI for primary educators positively influenced the participants' perception of stress and their ability to appraise and regulate emotions. Subsequently, their ability to tolerate distress impacted levels of resilience and their ability to manage stress.

Within the context of higher education, resilience and Eastern conceptualizations of mindfulness have been beneficial for college students, but no studies explored the impact on faculty, staff, or administrators. Roulston et al. (2018) found that when students participated in a mindfulness-based intervention, perceived stress scores decreased, while resilience and mental well-being scores significantly improved when compared to the control group. A similar study reported that mindfulness predicted resiliency and academic self-efficacy (Keye & Pidgeon, 2013). This dissertation study differs from other studies on Eastern mindfulness because it clarifies that socio-cognitive mindfulness not only reduces stress but also shapes resilience, a psychological resource connected to well-being.

Limitations

This study's findings should first be considered within the context of its limitations and delimitations. First, nonprobability sampling was employed by using an extracted list of email addresses from one database of higher education personnel; multiple recruitment strategies, including listservs or social media postings, were not utilized. This type of sampling may run the risk that the results may not be generalizable or representative of the total population. Second, self-report measures run an inherent risk as social desirability bias or exaggeration may have

occurred despite measures taken to address anonymity, confidentiality, and privacy. There is also the risk that by using self-reported quantitative measures, the tools selected may not have elicited an accurate representation of the operationalized variables.

In addition, I collected data during the first two months of the novel coronavirus pandemic in the United States, a time in which the state of the nation underwent significant change and uncertainty. More specifically, the World Health Organization announced the official name of the new virus as "the coronavirus disease 2019," or COVID-19, that had spread quickly and into almost every country from December to February. In March 2020, the disease was declared a pandemic (CDC, 2020) and by mid-March 2020, most universities and colleges in the United States quickly pivoted to a virtual/online learning environment (Alexander, 2020). I disseminated the online surveys for this dissertation study from mid-April 2020 to mid-May 2020. During this period, heightened use of social distancing was applied throughout the nation as administrators, faculty, and staff attempted to transition abruptly into a fully online environment. Therefore, participant responses to the measures used to assess the variables may have been affected by the social, economic, and cultural impact of this particular global health crisis.

Studies have indicated that stress increased during the initial response period of the pandemic (APA, 2020; Keeter, 2020); hence, it can be reasonably inferred that perceived stress, in particular, may have been influenced during the data collection period. According to the APA's report (2020) titled "Stress in the Time of COVID-19," stress related to the economy rose and work-related stress significantly increased. Keeter (2020) also revealed that approximately one-third of Americans reported experiencing high levels of psychological distress in March and April 2020 amid an extended time of social distancing, economic downturn, and shift to remote-

based education and work; this is the approximate period in which data were collected for this study.

To address this potential limitation, I included additional supplemental questions to compare the shift in the remote/online working environment to pre-COVID-19 levels, address satisfaction with the institutions transition to online learning and working, and assess levels of increased overall and work-related stress amid the pandemic. The supplemental questions on increased stress levels during COVID-19 indicated that a majority of respondents reported a moderate or significant increase in work stress. Accordingly, it is feasible to attribute the higher levels of perceived stress to the unprecedented nature of the COVID-19 pandemic and its impact on the unpredictability in respondents' personal and professional lives.

Since socio-cognitive mindfulness is based on the premise that one must seek novel perspectives and employ cognitive flexibility (Langer & Moldoveanu, 2000) to cultivate creativity (Bercovitz et al., 2017) and improve attentional processes (Langer et al., 1988), it is also reasonable to deduce that participants may have been naturally thrust into mindful thinking as the initial response to the novel coronavirus pandemic interrupted typical work patterns and influenced overall stress. Moreover, Rossouw (2019) identified resilience as "advancing despite adversity," and in this study, resilience was measured by the total score of six domains, namely Vision, Composure, Reasoning, Tenacity, Collaboration, and Health (para. 1). In light of this emerging definition, participants in this study may have organically boosted socio-cognitive mindfulness and resilience, and thus, reduced their perceived stress.

To reiterate, the variables studied may have been affected by the social, economic, and cultural impact of an unprecedented global health crisis. Results indicated this population exhibited higher levels of socio-cognitive mindfulness, resilience, and perceived stress than in

previous studies. Higher levels may be expounded to three possible explanations: 1) middle managers in academia may naturally be more mindful, resilient, and have higher levels of perceived stress and may self-select into academia and leadership roles, 2) the nature of their work in navigating the demands and challenges of middle management in higher education results in higher levels of socio-cognitive mindfulness, resilience, and perceived stress, or 3) participants' response to the pandemic may have propelled them to experience higher levels of socio-cognitive mindfulness, resilience, and perceived stress. Details related to these potential implications are found in subsequent sections of this chapter. Given these limitations, the findings should be examined within the purview of higher education as a turbulent industry and within the milieu of the COVID-19 pandemic experience, specifically within the United States. Any interpretation of these findings should be considered in light of this context.

Delimitations included the decision to narrow the population scope to include only four-year institutions located in the United States (excluding U.S. territories). Additionally, the focus on neurobiological resilience, socio-cognitive mindfulness, and perceived stress versus other perspectives of these constructs narrowed the scope of these variables and to only within a specific subset of higher education—academic middle managers. The chosen quantitative methodology of this study may also be considered a delimitation. I could have employed a qualitative or mixed methods approach and formulated a broad set of research questions capturing the unique roles within this population and their experiences with the identified variables in this study. Research questions may have considered the interplay of the variables or how participants may experience each construct within the context of their personal and professional lives. Themes related to these questions may have been extrapolated and could have provided a rich experience of these variables amid the global pandemic. Triangulating the data

with a mixed methods study may have also provided an understanding of how these psychological and social constructs integrate in nuanced and meaningful ways (Saldaña & Omasta, 2018).

Implications

Several implications may be extrapolated from the findings of this study. However, three primary themes that highlight the uniqueness of the study are addressed in this section.

First, the findings indicated that higher levels of socio-cognitive mindfulness resulted in lower perceived stress. In this study, socio-cognitive mindfulness was a statistically significant predictor of stress among academic middle managers. Langer and Moldoveanu (2000) posited the socio-cognitive mindful experience occurred through intentional methods of cultivating cognitive flexibility that allowed for more presence in the moment. As opposed to meditative mindfulness, it does not require meditation or breathing practices but rather an intentional reappraisal of a situation as novel. Evidence has suggested this type of mindfulness heightens empathy (Trent et al., 2016), enhances creativity (Bercovtiz et al., 2017), improves attentional processes (Langer, 1997), and decreases burnout (Langer et al., 1988). More recently, Pirson et al. (2018) linked socio-cognitive mindfulness to constructs related to psychological well-being (mental health, self-esteem, subjective well-being, life satisfaction), physical well-being (physical health conditions, reaction times), and social well-being (positive relations with others, job satisfaction, employee engagement, creativity, and decision making). Although Langer (2005) originally hypothesized a link between socio-cognitive mindfulness and stress, this study is among the first to indicate this type of mindfulness is a significant predictor of perceived stress. More specifically, results confirmed that when socio-cognitive mindfulness scores were high, perceived stress scores were low. In sum, results from this study suggest this type of

mindfulness could be implemented in professional development offerings aimed at the reduction or management of stress, especially in a turbulent, ever-changing environment like higher education.

Second, the findings suggest socio-cognitive mindfulness may be a direct path to reducing stress and may also be an indirect path by building resources like resilience. Rossouw (2019) defined resilience as "advancing despite adversity" (para. 1) and perceived resilient leadership in terms of goal-oriented growth, achievement, and adaptation in an ever-evolving environment. Rossouw (2018) also postulated that any individual in a high-stress work environment would benefit from investing in efforts to build well-being and personal resilience. While this study did not specifically address mindfulness training or intervention effectiveness, the findings do support the notion that the characteristics of socio-cognitive mindfulness (cognitive flexibility, novelty-seeking, and creativity) and resilience (adaptation, advancing despite adversity) could be curated to lower stress. Thus, leaders, particularly academic middle managers, may build psychological resilience and reduce stress through brief interventions that incorporate socio-cognitive mindfulness.

Third, socio-cognitive mindfulness, resilience, and perceived stress were higher among academic middle managers than other populations in previous studies. It is feasible that these participants naturally fostered higher levels of socio-cognitive mindfulness and resilience, which prompted their trajectory from academician/scholar into progressively responsible roles in academic leadership. It is unclear if this is due to their naturally high levels, which garnered the willingness to seek or self-select leadership roles in academia, the already turbulent nature of higher education, or the unprecedented impact of the initial response to the COVID-19 pandemic

within the United States. Further research on this population would be needed to clarify the reasons associated with this finding.

Recommendations

In today's global milieu of rapid change and constant evolution, higher education institutions must value innovation and strategic approaches to educate and enlighten future generations. Given the significant role that academic middle managers undertake, little is known about how one's psychological resources, such as mindfulness, resilience, and perceived stress, may influence colleagues, followers, supervisors, or overall organizational outcomes. Most research recommends additional professional development opportunities to support the academic middle manager role. However, most of those recommendations involve managing stressors rather than addressing the perception or subjective nature of stress. Scholars also tend to emphasize the technical challenges of management stressors rather than the psychological strategies needed to respond to the adaptive challenges of a turbulent environment. Thus, the findings from this dissertation serve as an impetus for recommendations in practice and future research.

Recommendations for Practice

Based on the findings of this dissertation study, a socio-cognitive mindfulness intervention may reduce perceived stress. These findings may be especially true for an organizational environment deemed turbulent, volatile, or ambiguous, such as in the current case of higher education institutions. Conversely, the findings may have been exacerbated by the global public health and economic crisis caused by the novel coronavirus pandemic. The following practice recommendations are outlined in the following sections.

Socio-Cognitive Mindfulness Training for Academic Middle Managers. The first recommendation is to incorporate Western mindfulness strategies in professional development education and trainings for middle managers in academia. Although many industries are integrating meditative practices into their employee assistance programs or other offerings, few have considered alternative mindfulness options. Since this type of mindfulness does not require significant experience in meditation or breathing practices (Langer, 2014), it may capture those who are resistant or critical of the primarily Eastern approach to mindfulness. According to Pagnini and Langer (2015), those who do not wish to engage in meditation can still improve mindfulness through brief cognitive interventions offered via socio-cognitive mindfulness.

Interestingly, socio-cognitive mindfulness interventions do not require meditation but instead focus on brief socio-cognitive mindfulness interventions to alter environmental, interpersonal, and cognitive perspectives (Langer, 2014). These cognitive-based interventions encourage participants to focus on novelty-seeking, novelty-producing, flexibility, and engagement in a situation or environment considered novel (Pirson et al., 2018). While this type of mindfulness situates in the present similar to meditation, it is also sensitive to organizational context, recognizes the complexity of systems, and emphasizes the perspective-taking of others (Langer & Moldoveanu, 2000). Middle managers in higher education may benefit from fostering socio-cognitive mindfulness as they navigate overwhelming demands, ambiguity of roles, and expectations from diverse constituents, such as the board of trustees, senior administrators, faculty, staff members, students, parents, alumni, and donors. Additionally, this population could actively cultivate socio-cognitive mindfulness when considering novel and innovative methods for managing the short and long-term impact of future crises as the United States evolves into a post-COVID-19 pandemic society.

Pagnini and Langer (2015) posited that socio-cognitive mindfulness interventions may not only recognize that things change, but also how those changes occur so creative perspective-taking assists in navigating through the multifaceted aspects of change. They further explained the following:

> Actually, mindfulness does not "promote positive reappraisal." "Reappraisal" is a form of mindfulness, given by the insight that things may be different than they were perceived in the first place. When mindful, we realize that there are different points of view in the same event (Langer, 1989), and we may decide to focus on the one that is more convenient or less stressful . . . [Thus,] the evaluation of the situation does not depend on the situation itself, but it depends on the personal point of view, which can be changed on purpose. This process of opening the mind and expanding the point of view is mindfulness. (p. 366)

As previously noted, there are some consistencies between meditative and socio-cognitive mindfulness, such as acceptance, openness, and curiosity; both also address consciousness via attention and awareness. However, Eastern mindfulness elicits a more affective style (Lazar, 2013), focused on the individual's internal awareness, while socio-cognitive mindfulness demonstrates a cognitive style in which "the goal of the mindful perspective is to increase cognitive flexibility and to thereby increase behavioral flexibility and the ability to adapt to one's current environment in a meaningful manner" (Carson & Langer, 2006, p. 29). In light of this study's findings, the ability to cognitively reframe and adapt may also be viewed as building resilience or advancing resilience abilities. The following sections outline possible recommendations for incorporating the findings of this study into practice.

Despite some alignment with previous studies, a key finding of this study highlights a relatively untapped segment of the leadership population, namely academic middle-managers. Employees in academia have experienced higher levels of stress than previously considered and due to an increasingly turbulent environment and changing landscape of higher education (Horvath, 2016; LeBlanc, 2018; Shin & Jung, 2014; Vilkinas & Cartan, 2015). As previously addressed in the literature review, much of this shift in turbulence and uncertainty is attributed to increased government and external stakeholder accountability, rapidly shifting market-driven forces, and evolving and ambiguous expectations within academic leadership positions.

Middle managers must balance the tension in the space of *middleness* (Fagin, 1997) in which one may no longer be considered faculty/scholar/colleague among those they lead. This tension is exacerbated while balancing the pressure and ambiguity amid organizational demands, such as increased efficiency and enrollment growth, with significant constraints, such as budget/personnel restrictions and greater accountability. Simultaneously, this population has experienced a paradigm shift in the qualifications of their position. While faculty may have historically preferred leaders viewed as exemplary scholars and colleagues, higher-level administrators have increasingly expected business-minded executives that are politically and economically savvy amid the complexities of higher education (Gmelch et al., 1999). Unfortunately, mid-level training and support are not consistent among or within institutions. The mid-level manager's responsibilities are typically based on contextual factors specific to the university's structure, culture, and climate, making it more challenging to streamline training and support; hence, cognitive flexibility and adaptation, which are both aspects of socio-cognitive mindfulness and resilience, are essential.

Many higher education managers with training and education exclusively within their respective disciplines may struggle with adapting to the changing climate and expectations. Additionally, most professional developmental offerings focus on the technical challenges of management rather than navigating adaptive challenges. Northouse (2016) identified that "adaptive challenges are difficult because they usually require changes in people's assumptions, perceptions, beliefs, attitudes, and behaviors" (p. 262). This type of change requires someone with a systems perspective who is also intentional when soliciting multiple perspectives; thus, adaptive leadership calls for a higher level of reflection, perspective-taking, and patience (Nicolaides & McCallum, 2013). This study's findings may support the notion that increasing socio-cognitive mindfulness levels may remedy some of the ambiguity and uncertainty related to adaptive challenges while reducing the adverse effects of perceived stress.

More specifically, middle managers in academia may benefit from addressing challenges as adaptive and fluid rather than technical problems to resolve, and socio-cognitive mindfulness may provide the skills necessary to do so. Nicolaides and McCallum (2013) identified leaders must address the nature of adaptive challenges by requiring "unlearning [of] old assumptions and attitudes and learning new ways of knowing, doing, and being" (pp. 248–249). This study supports socio-cognitive mindfulness, which reappraises change as novel by seeking multiple perspectives and promoting cognitive flexibility, may not only reduce stress but build resilience, which may also assist in tackling adaptive challenges. As previously noted, the type of resilience measured in this study focused on "advancing despite adversity" (Rossouw, 2019, para. 1) and emphasized healthy adaptation to thrive in the midst of uncertainty and ambiguity. Thus, the link between socio-cognitive mindfulness and resilience appears to support positive outcomes for academic middle managers as they approach adaptive challenges.

Adaptive leadership compels leaders to work diligently in promoting member buy-in when unconventional solutions are required to address complex situations (Heifetz et al., 2009), and many of the characteristics of a successful adaptive leader parallel with the components of a mindful leader. Dunoon and Langer (2011; 2013) profiled the mindful leader as one who elicits multiple perspectives, actively engages in self-appraisal, and remains aware and attentive to the social and organizational contexts that may require adaptation. Thus, this study's findings contribute to the notion that leaders with higher levels of socio-cognitive mindfulness may reappraise the perception of a stressor as novel rather than threatening and adapt by building resilience to thrive in an ever-changing climate.

Leaders in higher education, particularly middle managers, experience significant stress that may negatively influence many aspects of their personal and professional lives, including health and mental health issues, job dissatisfaction, burnout, role conflict, and role overload (Michailidis & Asimenos, 2002; Shin & Jung, 2014; Stickle & Scott, 2016). At the individual level, the adverse outcomes of stress can result in morbidity and, at extreme levels, mortality (Nielsen et al., 2008). At the organizational level, stress impacts productivity loss and increased turnover (Schulte et al., 2017). Thus, the consequences of not addressing the relationship between socio-cognitive mindfulness, resilience, and perceived stress among middle-managers may have dire implications for the employees they manage and ultimately, the institution's outcomes. Langer et al. (1988) identified mindlessness as "rigid mindsets, narrow perspectives, [and] the trap of old categories" (as cited in Langer, 2014, p. 146); they found that mindless workers reported a higher likelihood of burnout which may lead to other adverse outcomes such as cynicism and turnover. Subsequently, Rosser (2004) highlighted turnover, an outcome of

stress, in higher education results in higher levels of absenteeism, increased costs for training and development, and lost institutional memory.

Thus, the middle manager's perception of stress and levels of resilience and socio-cognitive mindfulness may also impact their employees and the organizational climate. In fact, Langer (2014) asserted that certain employee behavior, such as creativity, alertness, and the ability to be a self-starter, might depend on a manager's ability to admit and be comfortable with uncertainty. They suggested the following:

> Because people perceived as bright and knowledgeable tend to become managers, the sense that the boss knows *the* answer is pervasive, and asking questions is potentially intimidating to employees [but] . . . questions provide a good deal of information for managers. Moreover, if managers seek out information from employees to answer these questions, both will probably become more mindful and innovative (Langer, 2014, pp. 141–142).

Hence, socio-cognitive mindfulness may not only influence the manager's stress and resilience levels, but also their followers. Much of the research linking leader stress to leader behavior and, ultimately, follower stress and other adverse outcomes, is well-documented (Harms et al., 2017; Inceoglu et al., 2018; Nangia Sharma & Pearsall, 2016). Scholarship on organizational leadership has also documented how high levels of chronic stress not only influence both leaders' and followers' well-being but also lower productivity levels, elevate job strain, and negatively impact the organizational climate (Jimenez et al., 2017; Montano et al., 2017; Schmidt et al., 2018). To summarize, this study supports the use of socio-cognitive mindfulness as a predictive factor in boosting resilience and reducing stress. The findings build upon existing research that proposes stress in middle-management may not only impact the

individual, but also the faculty and staff they lead and, ultimately, certain organizational outcomes. Therefore, academic middle managers should consider ways to implementing socio-cognitive mindfulness for the betterment of their college and/or departments.

Socio-Cognitive Mindfulness Training for Others in Higher Education. The second recommendation is to consider ways in which this type of mindfulness might be introduced to other key personnel within higher education, namely, faculty and staff. Academic departments and colleges may also navigate turbulence and uncertainty by integrating a socio-cognitive mindfulness intervention into their repertoire of skills frequently used when problem solving and comfortability with uncertainty is warranted. Langer (2014) has touted that academia, "where certainty and scientific proof are much prized, the need to acknowledge uncertainty is valued but still often fiercely resisted" (p. 143). Langer and Piper (1987) found that when participants applied socio-cognitive mindfulness, uncertainty resulted in more creative solutions to a problem when compared with certain or stable situations. Thus, broad use of socio-cognitive mindfulness may not only benefit managers but also the faculty and staff they lead.

Interestingly, Langer et al. (2009) found that when a brief socio-cognitive mindfulness intervention was employed with orchestra musicians, who were guided on how to actively seek novelty in the music rather than compare it to an 'ideal' past performance, group performance was influenced. Researchers then provided the recordings of one with the intervention and one without, and results indicated orchestra members and neutral audience members were more likely to prefer the mindful music recording. Their studies affirmed that the simple act of instructing participants to find subtle ways to view their role or tasks within a group as novel and dynamic rather than rigid or stagnant may impact the perceptions of others both inside and

outside of the group. The authors asserted socio-cognitive mindfulness, when employed among individuals with a common goal, can improve group performance.

Prior research on socio-cognitive interventions that impact performance and perspective were conducted in a relatively stable environment. Based on the findings in this study, these interventions may also work well in industries, such as higher education, that experience volatile and turbulent change, and also in unprecedented periods of time of significant crisis and initial response as noted during the 2020 COVID-19 pandemic. Thus, senior administrators in higher education may benefit from integrating brief interventions of socio-cognitive mindfulness when working with academic middle managers, and subsequently, middle managers may employ such techniques when working with their followers at the college or departmental level.

Recommendations for Future Research

Undeniably, more studies are needed to examine the relationship between socio-cognitive mindfulness, resilience, and perceived stress. Despite some focus on stress and resilience in higher education literature, most studies explore the impact on students, faculty, or staff in areas outside academia. Few studies, and none conducted in the United States in the past decade, examine stress, resilience, or mindfulness among academic middle-managers. Additionally, none of those studies focused on the specific constructs of socio-cognitive mindfulness, neurobiological resilience, and perceived stress. Surprisingly, no study to date has considered these three specific conceptualizations among other populations, institutions, or countries.

Broaden the Sample of Academic Middle Managers. One recommendation for future research is to attain a larger and more inclusive sample of middle managers. One strategy to achieve a broader sample might be to locate a more thorough and comprehensive list or database of academic middle managers in higher education. Identifying a more rigorous strategy might

allow for probability sampling and may ensure results are generalizable or the sample is representative of the population. This study utilized a purposive sampling method via the most comprehensive database of higher education administrators available to date. However, access to the extracted list required significant cost, which may be difficult to replicate in future studies. As noted, an overwhelming majority of the academic middle managers surveyed were deans. Unfortunately, it was difficult to locate and obtain a complete list of deans, associate/assistant deans, department/chairs at the national level, and I could not locate relevant data to determine the number of academic middle managers who may have qualified to participate in the study. I especially noted clear barriers in obtaining an inclusive list of department chairs at the national level unless one chooses a specific discipline. Sherman et al. (2012) found that leaders in more powerful management positions, and presumably had more sense of control, exhibited less stress than leaders in lower positions. Hence, future researchers may focus on one segment of the academic middle manager population or compare and contrast how the level of leadership position may influence socio-cognitive-mindfulness, resilience, and perceived stress.

Expand the Research Design. Future research should explore a longitudinal design to determine how the three concepts may be influenced over time. In this study, a cross-sectional design did not allow for causal inference or interpretation as the process of becoming more mindful, building resilience, and perceiving stress may unfold over time. In addition, study participants were surveyed during the initial two months of an unprecedented pandemic in which heightened use of social distancing shifted participants to a remote-based and virtual workplace that was still considered novel. Therefore, future researchers should capture and examine longitudinal data and determine how the variables may shift or be dependent on the social, organizational, and societal context of the environment.

Future studies should also employ qualitative and mixed method designs to examine how socio-cognitive mindfulness, resilience, and perceived stress may supplement or enhance the quantitative methods used in this study. For example, researchers may consider triangulating data via a mixed-methods design or using observable information or self-reports from third parties who supervise or are supervised by the participant and identify certain leadership outcomes, such as effectiveness. Others' perceptions of the academic middle managers may likely differ from the participants' self-reported data. If empirically-supported, these potential similarities and differences could provide informative and enlightening perspectives on navigating uncertainty and turbulence in a particular institution or industry. Also, this type of methodology may link socio-cognitive mindfulness with other positive outcomes, such as leadership effectiveness, and provide a more direct connection between socio-cognitive mindfulness, resilience, and perceived stress on leadership or organizational outcomes.

Moreover, researchers should also conduct quasi-experimental studies on socio-cognitive mindfulness interventions and compare mean scores of mindfulness, resilience, and perceived stress at pre- and postintervention. Much of Langer's initial work in the area of mindlessness and mindfulness focused on field experiments. For example, future studies could confirm how a brief socio-cognitive mindfulness intervention for leaders may increase mindfulness and build resilience while simultaneously decreasing perceived stress. Hence, further exploration should address how these interventions may improve socio-cognitive mindfulness, resilience, and perceived stress.

Examine Other Theoretical Frameworks and/or Variables. Future scholarship should seek to understand socio-cognitive mindfulness in the context of emerging leadership theories as well as explore the influence of other variables. Organizational scholarship may benefit from

research examining socio-cognitive mindfulness with other recent or emerging leadership theories, such as transformational, authentic, servant, ethical, or team/shared/distributed leadership, to name a few. For example, given the connections between cognitive flexibility and adaptation, researchers should explore a potential relationship between socio-cognitive mindfulness, resilience, and adaptive leadership. Heifetz et al. (2009) defined adaptive leadership as "the practice of mobilizing people to tackle tough challenges and thrive" in which adaptive changes may "significantly displace, reregulate, and rearrange" historical ways of problem-solving (pp. 15–16). As previously mentioned, there are also several parallels between Langer's conceptualization of the mindful leader (Dunoon & Langer, 2011) and the adaptive leader.

While the results indicated socio-cognitive mindfulness significantly predicted perceived stress levels and resilience fully mediated the relationship, the proposed mediation model explained 18.7% of the variance. One primary limitation of a simple mediation model is the risk of missing certain variables that may explain the relationship between the independent, mediator, and dependent variables (Fritz et al., 2016). There are many potential variables to explore when examining a relationship between mindfulness, resilience, and stress. Prior research has considered mostly Eastern concepts of mindfulness (Lomas et al., 2017; Roche et al., 2014) in combination with social support (Wilks & Croom, 2008), self-efficacy (Smith, 2018), psychological capital (Avey et al., 2009; Luthans & Youssef-Morgan, 2017), and well-being (Grover et al., 2019; Rupert & Dorociak, 2019), to name a few. Thus, future research should include other variables, particularly related to well-being, as mediators, and/or explore a more complex mediation model to determine how other psychological skills or resources, such as those named above, influence the relationship between socio-cognitive mindfulness, resilience, and perceived stress.

Conduct Similar Research in Times of Stability and Turbulance/Uncertainty.

Finally, although higher education is deemed a turbulent environment in which employees have experienced increased stress within the past decade, replication is necessary to confirm the findings of this study. Replication is especially important because data was gathered amid the initial stages of the COVID-19 pandemic, and thus provided a unique snapshot that may have influenced the results. As well, replicating this research design may provide further support of the findings among other populations or industries experiencing a disruptive or turbulent environment.

Conclusions

The purpose of this quantitative correlational study was to examine how socio-cognitive mindfulness predicted perceived stress among middle-managers in higher education and whether the relationship was mediated by resilience. Two research questions with corresponding hypotheses were developed to guide the methodology and were based on a mediation model. The results underpin that socio-cognitive mindfulness is a significant predictor of perceived stress, and resilience fully mediated the relationship between socio-cognitive mindfulness and perceived stress. Moreover, the findings indicated the importance of understanding the relationship between mindfulness and resilience in predicting perceived stress.

As previously mentioned, meditative mindfulness has been found to play a key role in addressing stress (Baer et al., 2012; Wasylkiw et al., 2015), and socio-cognitive mindfulness has been found to build resources such as empathy (Trent et al., 2016) and creativity (Bercovtiz et al., 2017), improve attentional processes (Langer, 1997), and reduce burnout (Langer et al., 1988). Both meditative mindfulness and resilience have been positively related to health and mental health outcomes, including decreased perceived stress (Lebares et al., 2018; Smith,

2018). However, this study sought to examine if socio-cognitive mindfulness predicted perceived stress and whether resilience was a mediating mechanism through which mindfulness influenced perceived stress levels among leaders in a turbulent work environment during an unprecedented time in the United States. By assessing the complex relationship between socio-cognitive mindfulness, resilience, and perceived stress among academic middle managers, the findings help to explain any connections between the phenomena and clarify how socio-cognitive mindfulness can be implemented within higher education professional development to build resilience and reduce stress especially in times of uncertainty and ambiguity. As Langer advocated in a recent lecture (Talks at Harvard College, 2019):

> In study after study [on socio-cognitive mindfulness], we find that once we allow things to vary, once we recognize that we don't know . . . we stay tuned in [and] start to appreciate uncertainty. If we exploit the power of uncertainty, remaining uncertain leads us to be more mindful. If we are more mindful, we will easily readily improve our health, our happiness, and our vitality.

This study is a first of its kind to examine the relationships between socio-cognitive mindfulness, resilience, and perceived stress. Most scholarship in these areas address other conceptualizations as each variable is considered polysemous and ambiguous in nature. For example, few researchers agree on the definition of resilience and a majority of studies assess outcomes based on a clinical perspective of boucing back after crisis or adversity. However, this study focused on an emerging perspective of resilience rooted within a neurobiological framework. Prior research on this conceptualization of resilience has shown promising effects on job satisfaction (Rossouw, Rossouw, et al., 2017) and theorized it as an aid in managing stress (Rossouw et al., 2019). Moreoever, perceived stress has been primarily studied in the healthcare

setting, and few studies have addressed this type of stress in leadership or within higher education. In addition, this study uniquely examined socio-cognitive mindfulness, categorized as a mindset-oriented approach (Kang et al., 2014), which is similar yet distinctive from the meditative approach. As previously noted, this type of mindfulness does not require significant training in breathing practices or meditation (Langer, 2014). Unlike the well-studied meditative mindfulness perspective, the findings of this dissertation study further extend research on the benefits of the Western, cognitive style of mindfulness as an important predictor of stress. Moreover, this study reinforced that socio-cognitive mindfulness builds positive coping resources, such as resilience, while reducing adverse outcomes, such as perceived stress, similar to meditative mindfulness.

This is also the first study to address perceived stress, as opposed to task-based stressors, among academic middle managers. This research emphasized Lazarus's (1966) theoretical framework on stress coping and stress appraisal and further examined stress perception. Cohen's (Cohen et al., 1983) extension of Lazarus's theoretical framework prioritized the perception of stress as a more holistic assessment than the objective measurement of events or tasks that are stressors. Thus, this study sought to uniquely examine academic middle managers with an emphasis on perceived stress rather than specific stress events or certain tasks or role responsibilities that exacerbate stressors, which is typically studied in this population (Armstrong & Woloshyn, 2017; Gmelch & Burns, 1994; Gmelch et al., 1999; Wild et al., 2003; Wolverton, Wolverton, et al., 1999). Results indicated that to facilitate sustainable and healthy ways of engaging in work, this population may benefit from proactively cultivating positive coping responses, such as socio-cognitive mindfulness and resilience, so that when adaptive challenges arise, perceived stress may be minimized even while stressors and demands escalate.

In sum, no studies have examined socio-cognitive mindfulness with perceived stress and resilience. Additionally, no other research addresses the relationship between socio-cognitive mindfulness, perceived stress, and resilience among academic middle managers in higher education. Furthermore, no study to date has examined the specific conceptualizations of socio-cognitive mindfulness (as measured by the LMS-14), resilience (as measured by the PR6-16), and perceived stress (as measured by the PSS-10) among any population. Understanding these connections is critical to helping not only leaders in higher education but also their multiple constituents and the overall organization's success and stability.

This study provides significance to the existing organizational leadership scholarship in three ways. First, the study hypothesized and confirmed a connection between mindfulness, resilience, and stress, each of which are not operationalized well in previous studies. Second, there are many ways higher education leaders attempt to minimize stress, including additional training and professional development in the logistics of management or how to manage stressors. However, there has been no prior evaluation of how socio-cognitive mindfulness and resilience interplay, and as a result, reduce perceived stress. This study investigated and assessed that connection by promoting the need for more than technical or logistical training and suggested the need for professional development offerings that emphasize the practice of navigating uncertainty and adaptive challenges common to this population.

Third, these findings also suggest brief cognitive-based interventions in mindfulness may be as essential to professional development programming as the emerging focus on more intensive meditation interventions. This is especially vital to consider as more programming on meditation is increasingly incorporated into leadership research and training initiatives; however, there remains a segment of people not interested in intensive meditation or breathing practices,

but they may still reap the benefits from brief socio-cognitive mindfulness interventions (Pagnini et al., 2016). Recommendations for future practice address the need for practical strategies, via brief socio-cognitive mindfulness interventions, to build resilience that steer leaders towards practicing higher levels of self-awareness, self-reflection, and self-regulation and adjust behavior and cognitive patterns accordingly and as stressors fluctuate (Cseh et al., 2013; Heslin & Keating, 2016; Yeager & Dweck, 2012). Those who work in higher education administration and supervise academic middle managers may find this study useful as it provides additional insight on addressing stress in the turbulent, ever-changing environment of higher education.

In conclusion, this study provided a quantitative, correlational research design exploring the relationship between socio-cognitive mindfulness, resilience, and perceived stress among academic middle managers in higher education. This dissertation study achieved its objective in examining the predictive role of socio-cognitive mindfulness as an important contributor to building resilience and reducing stress. This chapter addressed the findings of this study in terms of the contribution and connection to past literature as well as the limitations, implications, recommendations, and significance for academic middle managers, administrators in higher education, and organizational leadership researchers.

References

Acker, S. (2012). Chairing and caring: Gendered dimensions of leadership in academe. *Gender and Education, 24*(4), 411–428. https://doi.org/10.1080/09540253.2011.628927

Aiena, B. J., Baczwaski, B. J., Schulenberg, S. E., & Buchanan, E. M. (2015). Measuring resilience with the RS-14: A tale of two samples. *Journal of Personality Assessment, 97*(3), 291–300. https://doi.org/10.1080/00223891.2014.951445

Alexander, B. (2020, May 28). *COVID-19: Higher education resource center*. https://www.entangled.solutions/coronavirus-he/

Allen, M. (2017). Sobel test. *The Sage Encyclopedia of Communication Research Methods* (Vols. 1–4). Sage. https://doi.org/10.4135/9781483381411

Allison, E. (2011). The resilient leader. *Educational Leadership, 69*(4), 79–82. http://www.ascd.org/publications/educational-leadership/dec11/vol69/num04/The-Resilient-Leader.aspx

Allott, K. A., Rapado-Castro, M., Proffitt, T. M., Bendall, S., Garner, B., Butselaar, F., Markulev, C., Phassouliotis, C., McGorry, P. D., Wood, S. J., Cotton, S. M., & Phillips, L. J. (2015). The impact of neuropsychological functioning and coping style on perceived stress in individuals with first-episode psychosis and health controls. *Psychiatry Research, 226*(1), 128–135. https://doi.org/10.1016/j.psychres.2014.12.032

American Psychological Association (2020). *Stress in the time of COVID-19: Volume I. Stress in America Survey*. https://www.apa.org/news/press/releases/stress/2020/stress-in-america-covid.pdf

Andrei, F., Vesely, A., & Siegling, A. (2016). An examination of concurrent and incremental validity of four mindfulness scales. *Journal of Psychopathology & Behavioral Assessment*, *38*(4), 559–571. https://doi.org/10.1007/s10862-016-9546-x

Armstrong, D. E., & Woloshyn, V. E. (2017). Exploring the tensions and ambiguities of university department chairs. *Canadian Journal of Higher Education*, *47*(1), 97–113. http://journals.sfu.ca/cjhe/index.php/cjhe

Ashford, S. J., & DeRue, D. S. (2012). Developing as a leader: The power of mindful engagement. *Organizational Dynamics*, *41*(2), 146–154. https://doi.org/10.1016/j.orgdyn.2012.01.008

Avey, J. B., Luthans, F., & Jensen, S. M. (2009). Psychological capital: A positive resource for combating employee stress and turnover. *Human Resource Management*, *48*(5), 677–693. https://doi.org/10.1002/hrm.20294

Aziz, S., Mullins, M. E., Balzer, W. K., Grauer, E., Burnfield, J. L., Lodato, M. A., & Cohen-Powless, M. A. (2005). Understanding the training needs of department chairs. *Studies in Higher Education*, *30*(5), 571–593. https://doi.org/10.1080/03075070500249260

Baer, R. A., Carmody, J., & Hunsinger, M. (2012). Weekly change in mindfulness and perceived stress in a mindfulness-based stress reduction program. *Journal of Clinical Psychology*, *68*(7), 755–765. https://doi.org/10.1002/jclp.21865

Baron, L. (2016). Authentic leadership and mindfulness development through action learning. *Journal of Managerial Psychology*, *31*(1), 296–311. https://doi.org/10.1108/JMP-04-2014-0135

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Bartone, P. T. (2006). Resilience under military operational stress: Can leaders influence hardiness? *Military Psychology, 18,* 131–148. https://doi.org/10.1207/s15327876mp1803s_10

Bercovitz, K., Pagnini, F., Phillips, D., & Langer, E. (2017). Utilizing a creative task to assess Langerian mindfulness. *Creativity Research Journal, 29*(2), 194–199. https://doi.org/10.1080/10400419.2017.1304080

Bettinger, E. P., & Long, B. T. (2010). Does cheaper mean better? The impact of using adjunct instructors on student outcomes. *Review of Economics and Statistics, 93*(3), 598–613. https://www.jstor.org/stable/27867562

Bishop, S. R. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science & Practice, 11*(3), 230–241. https://doi.org/10.1093/clipsy.bph077

Block, B. (2014). Leadership and ambiguity: When policy, politics, and truth collide. *Quest, 66*(4), 323–337. https://doi.org/10.1080/00336297.2014.936622

Blumenstyk, G. (2015). *American higher education in crisis?: What everyone needs to know*. Oxford University Press.

Bodner, T. (2000). *On the assessment of individual differences in mindful information processing: A thesis.* Harvard University.

Bodner, T., & Langer, E. (2001). *Individual differences in mindfulness: The mindfulness/ mindlessness scale*. Poster presented at the 13th Annual American Psychological Society Convention, Toronto, Ontario, Canada.

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely adverse events? *American Psychologist, 59*(1), 20–28. https://doi.org/10.1037/0003-066X.59.1.20

Bowlin, S. L., & Baer, R. A. (2012). Relationships between mindfulness, self-control, and psychological functioning. *Personality and Individual Differences*, *52*(3), 411–415. https://doi.org/10.1016/j.paid.2011.10.050

Bowling, N. A., Khazon, S., Alarcon, G. M., Blackmore, C. E., Bragg, C. B., Hoepf, M. R., Barekla, A., Kennedy, K., Wang, Q., & Li, H. (2017). Building better measures of role ambiguity and role conflict: The validation of new role stressor scales. *Work & Stress*, *31*(1), 1–23. https://doi.org/10.1080/02678373.2017.1292563

Brendel, W., Hankerson, S., Byun, S., & Cunningham, B. (2016). Cultivating leadership Dharma: Measuring the impact of regular mindfulness practice on creativity, resilience, tolerance for ambiguity, anxiety and stress. *Journal of Management Development, 35*(8), 1056–1078. https://doi.org/10.1108/JMD-09-2015-0127

Breznitz, S., & Goldberger, L. (1993). Stress research at a crossroads. In L. Goldberger & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (2nd ed., pp. 3–6). Free Press.

Brown, K. W. (2015). Mindfulness training to enhance positive functioning. In K. W. Brown, J. D. Creswell, & R. M. Ryan (Eds.), *Handbook of mindfulness: Theory, research, and practice*. Guildford Press.

Brown, K. W., Creswell, J. D., & Ryan, R. M. (2015). *Handbook of mindfulness: Theory, research, and practice*. Guildford Press.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822–848. https://doi.org/10.1037/0022-3514.84.4.822

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry, 18*(4), 211–237. https://doi.org/10.1080/10478400701598298

Brown, J., & Langer, E. (1990). Mindfulness and intelligence: A comparison. *Educational Psychologist, 25*(3/4), 305–335. https://doi.org/10.1080/00461520.1990.9653116

Buchholz, L. (2015). Exploring the promise of mindfulness in medicine. *Journal of the American Medical Association, 314*(13), 1327–1329. https://doi.org/10.1001/jama.2015.7023

Carmody, J. (2014). Eastern and Western approaches to mindfulness: Similarities, differences, and clinical implications. In A. Ie, C. T. Ngnoumen, & E. J. Langer (Eds.), *Wiley handbook of mindfulness* (pp. 48–57). John Wiley & Sons.

Carnegie Classification of Institutions of Higher Education (n.d.). *About Carnegie classification*. http://carnegieclassifications.iu.edu

Carson, S. H., and Langer, E. J. (2006). Mindfulness and self-acceptance. *Journal of Rational-Emotive & Cognitive Behavior Therapy, 24*, 29–43. https://doi.org/10.1007/s10942-006-0022-5

Cathomas, F., Murrough, J. W., Nestler, E. J., Han, M., & Russo, S. J. (2019). Neurobiology of resilience: Interface between mind and body. *Biological Psychiatry, 86*(6), 410–420. https://doi.org/10.1016/j.biopsych.2019.04.011

Centers for Disease Control and Prevention. (2020, April 23). *CDC's response to COVID-19.* https://www.cdc.gov/coronavirus/2019-ncov/cdcresponse/index.html

Cherkin, D. C., Anderson, M. L., Sherman, K. J., Balderson, B. H., Cook, A. J., Hansen, K. E., & Turner, J. A. (2017). Two-year follow-up of a randomized clinical trial of mindfulness-based stress reduction vs cognitive behavioral therapy or usual care for chronic low back pain. *Journal of the American Medical Association, 317*(6), 642–644. https://doi.org/10.1001/jama.2016.17814

Chin, B. Lindsay, E. K., Greco, C. M., Brown, K. W., Smyth, J. M., Wright, A. G. C., & Creswell, J. D. (2019). Psychological mechanisms driving stress resilience in mindfulness training: A randomized controlled trial. *Health Psychology, 38*(8), 759–768. https://doi.org/10.1037/hea0000763

Christensen, C. M., & Eyring, H. J. (2011). *The innovative university: Changing the DNA of higher education from the inside out.* Jossey-Bass.

Christman, D. E., & McClellan, R. L. (2012). Discovering middle space: Distinctions of sex and gender in resilient leadership. *Journal of Higher Education, 83*(5), 648–670. http://www.jstor.org/stable/23256880

Clark, H. G., Moore, B. A., Johnston, L. B., & Openshaw, L. (2011). Using adjuncts in Social Work education: Challenges and Rewards. *Social Work Education, 30*(8), 1012–1021. https://doi.org/10.1080/02615479.2010.534450

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*(5), 300–314. https://doi.org/10.1097/00006842-197609000-00003

Cohen, S. (1986). Contrasting the Hassles Scale and the Perceived Stress Scale: Who's really measuring appraised stress? *American Psychologist, 41*(6), 716–718. https://doi.org/10.1037/0003-066X.41.6.716

Cohen, S. (1994). Perceived stress scale. http://www.mindgarden.com/documents/PerceivedStressScale.pdf

Cohen, S., & Janicki-Deverts, D. (2012). Who's stressed? Distributions of psychological stress in the United States in probability samples from 1983, 2006, and 2009. *Journal of Applied Social Psychology*, *42*(6), 1320–1334. https://doi.org/10.1111/j.1559-1816.2012.00900.x

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396. https://www.jstor.org/stable/2136404

Cohen, S., & Williamson, G. (1988). Psychological stress in a probability sample of the United States. In *The social psychology of health: Claremont Symposium on Applied Social Psychology* (pp. 31–67). Sage.

CollegeData.com (2020). *College size: Small, medium or large? Facts on fit*. https://www.collegedata.com/en/explore-colleges/the-facts-on-fit/features-that-set-colleges-apart/college-size-small-medium-or-large/

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression & Anxiety (1091-4269)*, *18*(2), 76–82. https://doi.org/10.1002/da.10113 \

Cooper, C. L., Sloan, S. J., & Williams, S. (1988). *Occupational stress indicator management guide*. NFER-Nelson.

Cottrell, S. (2001). Occupational stress and job satisfaction in mental health nursing: Focused interventions through evidence-based assessment. *Journal of Psychiatric and Mental Health Nursing, 8*(2), 157–164. https://doi.org/10.1046/j.1365-2850.2001.00373.x

Crum, A., & Lyddy, C. (2014). De-stressing stress: The power of mindsets and the art of stressing mindfully. In A. Ie, C. T. Ngnoumen, & E. J. Langer (Eds.), *Wiley handbook of mindfulness* (pp. 169–185). John Wiley & Sons.

Curtis, E. A., Comiskey, C., & Dempsey, O. (2016). Importance and use of correlational research. *Nurse Researcher, 23*(6), 20–25. https://doi.org/10.7748/nr.2016.e1382

Cseh, M., Davis, E. B., & Khilji, S. E. (2013). Developing a global mindset: Learning of global leaders. *European Journal of Training and Development, 37*(5), 489–499. https://doi.org/10.1108/03090591311327303

Damásio, B., Borsa, J., & da Silva, J. (2011). 14-item Resilience Scale (RS-14): Psychometric properties of the Brazilian version. *Journal of Nursing Measurement, 19*(3), 131–145. https://doi.org/10.1891/1061-3749.19.3.131

Davis, H. (2014). Towards leadingful leadership literacies for higher education management. *Journal of Higher Education Policy and Management, 36*(4), 371–382. https://doi.org/10.1080/1360080X.2014.916467

Dundas, I., Thorsheim, T., Hjeltnes, A., & Binder, P. E. (2016). Mindfulness based stress reduction for academic evaluation anxiety: A naturalistic longitudinal study. *Journal of College Student Psychotherapy, 20*(2), 114–131. https://doi.org/10.1080/87568225.2016.1140988

Drucker, P. F. (2001). *Management challenges for the 21st century*. HarperBusiness.

Dugger, K. (2001). Women in higher education in the United States: II statistics. *International Journal of Sociology and Social Policy, 21*(2), 131–142. https://doi.org/10.1108/01443330110789646

Dunoon, D., & Langer, E. J. (2011). Mindfulness and leadership: Opening up to possibilities. *Integral Leadership Review*, *11*(5), 1–15. http://nrs.harvard.edu/urn-3:HUL.InstRepos:25277895

Dunoon, D., & Langer, E. (2012, June). Mindful leadership communication: Three keys for action. *Training & Development*, *39*(3), 12–14. http://nrs.harvard.edu/urn-3:HUL.InstRepos:34721986

Dweck, C. S. (2016). Mindset: The new psychology of success. Random House.

Eckel, P. D., & King, J. E. (2004). *An overview of higher education in the United States: Diversity, access, and the role of the marketplace.* American Council on Education. https://www.acenet.edu/Documents/Overview-of-Higher-Education-in-the-United-States-Diversity-Access-and-the-Role-of-the-Marketplace-2004.pdf

Fagin, C. M. (1997). The leadership role of a dean. *New Directions for Higher Education, 98,* 95–100. https://doi.org/10.1002/he.9809

Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health*, *26*(1), 399–419. https://doi.org/10.1146/annurev.publhealth.26.021304.144357

Field, A. (2018). *Discovering Statistics using IBM SPSS Statistics* (5th ed.). Sage.

Fisher, S. (1994). *Stress in academic life: The mental assembly line*. Open University Press.

Flaherty. C. (2019, April 24). Women best represented among lowest-paid deans. *Inside Higher Ed.* https://www.insidehighered.com/quicktakes/2019/04/24/women-best-represented-among-lowest-paid-deans

Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts, and theory. *European Psychologist*, *18*(1), 12–23. https://doi.org/10.1027/1016-9040/a000124

Floyd, A. (2012). "Turning points": The personal and professional circumstances that lead academics to become middle managers. *Educational Management Administration and Leadership, 40*(20), 272–484. http://doi.org/10.1177/1741143211427980

Floyd, A. (2016). Supporting academic middle managers in higher education: Do we care? *Higher Education Policy*. https://doi.org/10.1057/hep.2015.11

Floyd, A., & Preston, D. (2018). The role of the associate dean in UK universities: Distributed leadership in action? *Higher Education, 75*(5), 925–943. https://doi.org/10.1007/s10734-017-0178-1

Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology, 50*(5), 992–1003. https://doi.org/10.1037/0022-3514.50.5.992

Follett, M. P. (1925). How must business management develop in order to possess the essentials of a profession? In H. C. Metcalf & L. F. Urwick (Eds.) *Dynamic administration: The collected papers* (pp. 117–131). Harper & Bros (Reprinted in 1940).

Follett, M. P. (1927). Leader and expert. In H. C. Metcalf & L. F. Urwick (Eds.), *Dynamic administration: The collected papers* (pp. 117–131). Harper & Bros (Reprinted in 1940).

Follett, M. P. (1933). The essentials of leadership [one of five lectures given to inaugurate the Department of Business Administration, London School of Economics, University of London]. In P. Graham (Ed.), *Mary Parker Follett – Prophet of management: A celebration of writings from the 1920s* (pp. 163–177). Beard Books (Reprinted as Chapter 6, 1995).

Follett, M. P. (1949). *Freedom and co-ordination: Lectures in business organization*. Management Publications Trust.

Frazier, P. A., Tix, A. P. & Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology, 51(*1), 115–134. https://doi.org/10.1037/0022-0167.51.1.115

Fritz, M. S., Kenny, D. A., MacKinnon, D. P. (2016). The combined effects of measurement error and omitting confounders in the single-mediator model. *Multivariate Behavioral Research, 51*(5), 681–697. https://doi.org/10.1080/00273171.2016.1224154

Garland, E., Gaylord, S., & Park, J. (2009). The role of mindfulness in positive reappraisal. *Explore: Journal of Science and Healing*, *5*(1), 37–44. https://doi.org/10.1016/j.explore.2008.10.001

George, S. A., & Coudret, N. A. (1986). Dynamics and dilemmas of the associate and assistant dean roles. *Journal of Professional Nursing, 2*(3), 173–179. https://doi.org/10.1016/S8755-7223(86)80063-1

Gillespie, N. A., Walsh, M., Winefield, A. H., Dua, J., & Stough, C. (2001). Occupational stress in universities: Staff perceptions of the causes, consequences and moderators of stress. *Work & Stress, 15*(1), 53–72. https://doi.org/10.1080/02678370110062449

Glater, J. D. (2016). Debt, merit, and equity in higher education access. *Law & Contemporary*

Problems, 79(3), 89–113. http://scholarship.law.duke.edu/lcp/vol79/iss3/5/

Glick, W. H., Jenkins, G. D., & Gupta, N. (1986). Method versus substance: How strong are underlying relationships between job characteristics and attitudinal outcomes? *Academy of Management Journal, 29*(3), 441–464. https://doi.org/10.5465/256218

Gligorovski, V., Mancheski, G., and Angeleski, M. (2018). Quantification of the managerial stress. *TEM Journal, 7*(1), 201–210. https://doi.org/10.18421/TEM71-25

Gmelch, W. H., & Burns, J. S. (1994). Sources of stress for academic department chairpersons. *Journal of Educational Administration, 32*(1), 79–94. https://doi.org/10.1108/09578239410051862

Gmelch, W. H., & Swent, B. (1984). Management team stressors and their impact on administrators' health. Paper presented at the Annual Meeting of the American Educational Research Association in New York, NY. https://files.eric.ed.gov/fulltext/ED218761.pdf

Gmelch, W. H., Wilke, P. K., & Lovrich, N. P. (1986). Dimensions of stress among university faculty: Factor-analytic results from a national study. *Research in Higher Education, 24*(3), 266–286. https://doi.org/10.1007/BF00992075

Gmelch, W. H., Wolverton, M., Wolverton, M. L., & Sarros, J. C. (1999). The academic dean: An imperiled species searching for balance. *Research in Higher Education, 40*(6), 717–740. https://doi.org/10.1023/A:1018717015528

Gotink, R. A., Meijboom, R., Vernooij, M. W., Smits, M., & Hunink, M. G. M. (2016). 8-week Mindfulness Based Stress Reduction induces brain changes similar to traditional long-term meditation practice – A systematic review. *Brain and Cognition, 108*, 32–41. https://doi.org/10.1016/j.bandc.2016.07.001

Grant, A. M., Langer, E. J., Ealk, E., & Capodilupo, C. (2004). Mindful creativity: Drawing to draw distinctions. *Creativity Research Journal, 16*(2-3), 261–265. https://doi.org/10.1080/10400419.2004.9651457

Grover, R. L., DiDonato, T. E., Kirkhart, M. W., & Mehta, M. H. (2019) Examining the positive cognitive triad: A link between resilience and well-being. *Psychological Reports, 122*(3), 776–788. https://doi.org/10.1177/0033294118773722

Gulbrandsen, C. (2016). Measuring older women's resilience" Evaluating the suitability of the Connor-Davidson Resilience Scale and the Resilience Scale. *Journal of Women & Aging, 28*(3), 225–237. https://doi.org/10.1080/08952841.2014.951200

Gyatso, T. K. (1986). *Progressive states of meditation on emptiness*. Longchen.

Haas, A. S., & Langer, E. J. (2014). Mindful attraction and synchronization: Mindfulness and regulation of interpersonal synchronicity. *NeuroQuantology, 12*(1), 21–34. https://doi.org/10.14704/nq.2014.12.1.728

Halstead, E., Ekas, N., Hastings, R. P., & Griffith, G. M. (2018). Associations between resilience and the well-being of mothers of children with Autism spectrum disorder and other developmental disabilities. *Journal of Autism & Developmental Disorders, 48*(4), 1108–1121. https://doi.org/10.1007/s10803-017-3447-z

Hanley, A. W., & Garland, E. L. (2014). Dispositional mindfulness co-varies with self-reported positive reappraisal. *Personality and Individual Differences, 66,* 146–152. https://doi.org/10.1016/j.paid.2014.03.014

Harms, P. D., Credé, M., Tynan, M., Leon, M., & Jeung, W. (2017). Leadership and stress: A meta-analytic review. *Leadership Quarterly, 28*(1), 178–194. https://doi.org/10.1016/j.leaqua.2016.10.006

Harpin, S. B., Rossi, A. M., Kim, A. K., & Swanson, L. M. (2016). Behavioral impacts of a mindfulness pilot intervention for elementary students. *Education, 137*(2), 149–156. https://eric.ed.gov/?id=EJ1121526

Hart, R., Ivtzan, I., & Hart, D. (2013). Mind the gap in mindfulness research: A comparative account of the leading schools of thought. *Review of General Psychology, 17*(4), 453–466. https://doi.org/10.1037/a0035212

Harvard Institute of Coaching. (2015, February 2). Ellen Langer: What is mindfulness? [Video]. https://instituteofcoaching.org/resources/masterclass-mindfulness-understanding-and-defining-mindfulness-part-i

Heifetz, R., Grashow, A., & Linsky, M. (2009). *The practice of adaptive leadership: Tools and tactics for changing your organization and the world*. Harvard Business Press.

Heslin, P. A., & Keating, L. A. (2016). In learning mode? The role of mindsets in derailing and enabling experiential leadership development. *Leadership Quarterly, 28*(3), 367–384. https://doi.org/10.1016/j.leaqua.2016.10.010

Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*(2), 213–218. https://doi.org/10.1016/0022-3999(67)90010-4

Hölzel, B. K., Carmody, J., Evans, K. C., Hoge, E. A., Dusek, J. A., Morgan, L., Pitman, R. K., Lazar, S. W. (2010). Stress reduction correlates with structural changes in the amygdala. *Social Cognitive & Affective Neuroscience, 5*(1), 11–17. https://doi.org/10.1093/scan/nsp034

Hopthrow, T., Hooper, N., Mahmood, L., Meier, B. P., & Weger, U. (2017). Mindfulness reduces the correspondence bias. *Quarterly Journal of Experimental Psychology, 70(3),* 351–360. https://doi.org/10.1080/17470218.2016.1149498

Horvath, L. (2016). Organizational change in higher education. In *Proceedings of the 8th Annual Multidisciplinary Academic Conference* (pp. 217–226). Prague, Czech Republic: MAC Prague Consulting. https://www.academia.edu/29058968/Organizational_Change_in_Higher_Education

Hyland, P. K., Lee, R. A., & Mills, M. J. (2015). Mindfulness at work: A new approach to improving individual and organizational performance. *Industrial and Organizational Psychology*, *8*(4), 576–602. https://doi.org/10.1017/iop.2015.41

Inceoglu, I., Thomas, G., Chu, C., Plans, D., & Gerbasi, A. (2018). Leadership behavior and employee well-being: An integrated review and a future research agenda. *Leadership Quarterly, 29*(1), 179–202. https://doi.org/10.1016/j.leaqua.2017.12.006

Indiana University Center for Postsecondary Research (2018). *Carnegie classification of institutions of higher education, 2018 edition*. http://carnegieclassifications.iu.edu

Jha, A. P., Morrison, A. B., Parker, S. C., & Stanley, E. A. (2017). Practice is protective: Mindfulness training promotes cognitive resilience in high-stress cohorts. *Mindfulness, 8,* 46–58. https://doi.org/10.1007/s12671-015-0465-9

Jimenez, P., Winkler, B., & Bregenzer, A. (2017). Developing sustainable workplaces with leadership: Feedback about organizational working conditions to support leaders in health-promoting behavior. *Sustainability, 9*(11), 1944. https://doi.org/10.3390/su9111944

Johansen, B. (2017). *The new leadership literacies: Thriving in a future of extreme disruption and distributed everything*. Berrett-Koehler Publishers, Inc.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, *10*(2), 144–156. https://doi.org/10.1093/clipsy.bpg016

Kabat-Zinn, J. (2013). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. Bantam Books.

Kahn, W. A., Barton, M. A., Fisher, C. M., Heaphy, E. D., Reid, E. M., & Rouse, E. D. (2018). The geography of strain: Organizational resilience as a function of intergroup relations. *Academy of Management Review*, *43*(3), 509–529. https://doi.org/10.5465/amr.2016.0004

Kang, Y., Gruber, J., & Gray, J. R. (2014). Mindfulness: Deautomatization of cognitive and emotional life. In A. Ie, C. T. Ngnoumen, & E. J. Langer (Eds.), *Wiley handbook of mindfulness* (pp. 169–185). John Wiley & Sons.

Keeter, S. (2020, May 7). A third of Americans experienced high levels of psychological distress during the coronavirus outbreak. *Pew Research Center.* https://www.pewresearch.org/fact-tank/2020/05/07/a-third-of-americans-experienced-high-levels-of-psychological-distress-during-the-coronavirus-outbreak/

Kemper, K. J., & Khirallah, M. (2015). Acute effects of online mind-body skills training on resilience, mindfulness, and empathy. *Journal of Evidence-Based Complementary & Alternative Medicine, 20*(4), 247–253. https://doi.org/10.1177/2156587215575816

Kennedy, F., Carroll, B., & Francoeur, J. (2013). Mindset not skill set: Evaluating in new paradigms of leadership development. *Advances in Developing Human Resources*, *15*(1), 10–26. https://doi.org/10.1177/1523422312466835

Kenny, D. A. (2008). Reflections on mediation. *Organizational Research Methods*, *11*(2), 353–358. https://doi.org/10.1177/1094428107308978

Kent, M., & Davis, M. (2010). The emergence of capacity-building programs and models of resilience. In J. Reich, A. Zatura, & J. Hall (Eds.), *Handbook of adult resilience.* Guilford Press.

Keye, M., & Pidgeon, A. M. (2013). An investigation of the relationship between resilience, mindfulness, and academic self-efficacy. *Open Journal of Social Sciences, 1*(6), 1–4. https://doi.org/10.4236/jss.2013.16001

Kezar, A. (2017). Changing faculty workforce models. *TIAA-CREF Institute.* https://www.tiaainstitute.org/sites/default/files/presentations/2017-02/changing-faculty-workforce-models.pdf

Khoo, E.-L., Small, R., Cheng, W., Hatchard, T., Glynn, B., Rice, D. B., Skidmore, B., Kenny, S., Hutton, B., & Poulin, P. A. (2019). Comparative evaluation of group-based mindfulness-based stress reduction and cognitive behavioral therapy for the treatment and management of chronic pain: A systematic review and network meta-analysis. *Evidence Based Mental Health*, *22*(1), 26–35. https://doi.org/10.1136/ebmental-2018-300062

Khoury, B., Sharma, M., Rush, S. E., & Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of Psychosomatic Research*, *78*(6), 519–528. https://doi.org/10.1016/j.jpsychores.2015.03.009

Langer, E. J. (1989). Minding matters: The consequences of mindlessness–mindfulness. *Advances in Experimental Social Psychology*, *22*, 137–173. https://doi.org/10.1016/S0065-2601(08)60307-X

Langer, E. J., (1997). *The power of mindful learning.* Addison Wesley.

Langer, E. J. (2005). Well-being. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive Psychology* (pp. 214–230). Oxford University Press.

Langer, E. J. (2014). *Mindfulness: 25th anniversary edition*. Da Capo Press.

Langer, E. J., Blank, A., & Chanowitz, B. (1978). The mindlessness of ostensibly thoughtful action: The role of "placebic" information in interpersonal interaction. *Journal of Personality and Social Psychology, 36*(6), 635–642. https://doi.org/10.1037/0022-3514.36.6.635

Langer, E. J., Heffernan, D., & Kiester, M. (1988). *Reducing burnout in an institutional setting: An experimental investigation.* Unpublished manuscript, Harvard University.

Langer, E. J., & Moldoveanu, M. (2000). The construct of mindfulness. *Journal of Social Issues, 56*(1), 1–9. https://doi.org/10.1111/0022-4537.00148

Langer, E. J., & Piper, A. I. (1987). The prevention of mindlessness. *Journal of Personality and Social Psychology, 53*(2), 280–287. https://doi.org/10.1037/0022-3514.53.2.280

Langer, E., Pirson, M., & Delizonna, L. (2010). The mindlessness of social comparisons. *Psychology of Aesthetics, Creativity, and the Arts*, *4*(2), 68–74. https://doi.org/10.1037/a0017318

Langer, E., Russell, T., & Eisenkraft, N. (2009). Orchestral performance and the footprint of mindfulness. *Psychology of Music*, *37*(2), 125–136. https://doi.org/10.1177/0305735607086053

Lawton-Smith, C. (2017). Coaching for leadership resilience: An integrated approach. *International Coaching Psychology Review*, *12*(1), 6–23. http://organisationalpsychology.nz/wp_content/uploads/2019/07/Volume_12_No_1_March_2017.pdf

Lazar, S. W. (2013). Neurobiology of mindfulness. In C. K. Germer, R. D. Siegel, & P. R. Fulton (Eds.), *Mindfulness and psychotherapy* (2nd ed., pp. 283-294). Guilford Press.

Lazarus, R. S. (1966). *Psychological stress and the coping process*. McGraw-Hill.

Lazarus, R. S. (1993). Why we should think of stress as a subset of emotions. In L. Goldberger & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (2nd ed., pp. 3-6). Free Press.

Lazarus, R. S., & Cohen, J. B. (1977). Environmental stress. In I. Altman & J. F. Wohlwill (Eds.), *Human behavior and environment* (pp. 89–127). Springer.

L'Estrange, K., Timulak, L., Kinsella, L., & D'Alton, P. (2016). Experiences of changes in self-compassion following mindfulness-based intervention with a cancer population. *Mindfulness*, *7*(3), 734–744. https://doi.org/10.1007/s12671-016-0513-0

Leary, M. R. (2004). *The curse of the self: Self-awareness, egotism, and the quality of human life.* Oxford University Press.

Lebares, C. C., Guvva, E. V., Ascher, N. L., O'Sullivan, P. S., Harris, H. W., & Epel, E. S. (2018). Burnout and stress among US surgery residents: Psychological distress and resilience. *Journal of the American College of Surgeons*, *226*(1), 80–90. https://doi.org/10.1016/j.jamcollsurg.2017.10.010

LeBlanc, P. J. (2018). Higher education in a VUCA world. *Change*, *50*(3/4), 23–26. https://doi.org/10.1080/00091383.2018.1507370

Lee, H. H., & Cranford, J. A. (2008). Does resilience moderate the associations between parental problem drinking and adolescents' internalizing and externalizing behaviors? A study of Korean adolescents. *Drug and Alcohol Dependence*, *96*(3), 213–221. https://doi.org/10.1016/j.drugalcdep.2008.03.007

Leih, S., & Teece, D. (2016). Campus leadership and the entrepreneurial university: A dynamic capabilities perspective. *Academic of Management Perspectives, 30*(2), 182–210. https://doi.org/10.5465/amp.2015.0022

Lindfelt, T., Ip, E. J., Gomez, A., & Barnett, M. J. (2018). The impact of work-life balance on intention to stay in academia: Results from a national survey of pharmacy faculty. *Research in Social & Administrative Pharmacy, 14*(4), 387–390. https://doi.org/10.1016/j.sapharm.2017.04.008

Liu, C., Spector, P. E., & Jex, S. M. (2005). The relation of job control with job strains: A comparison of multiple data sources. *Journal of Occupational and organizational Psychology, 78,* 325–336. https://doi.org/10.1348/096317905X26002

Locke, W., Cummings, W. K., & Fisher, D. (2011). *Governance and management in higher education: The perspective of the academy*. Springer.

Lomas, T., Medina, J. C., Ivtzan, I., Rupprecht, S., Hart, R., & Eiroa-Orosa, F. J. (2017). The impact of mindfulness on well-being and performance in the workplace: An inclusive systematic review of the empirical literature. *European Journal of Work & Organizational Psychology*, *26*(4), 492–513. https://doi.org/10.1080/1359432X.2017.1308924

Ludwig, D. S., & Kabat-Zinn, J. (2008). Mindfulness in medicine. *Journal of the American Medical Association*, *300*(11), 1350–1352. https://doi.org/10.1001/jama.300.11.1350

Luiselli, J. K., Worthen, D., Carbonell, L., & Queen, A. H. (2017). Social validity assessment of mindfulness education and practices among high school students. *Journal of Applied School Psychology, 33*(2), 124–135. https://doi.org/10.1080/15377903.2016.1264531

Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of*

Organizational Behavior, 23(6), 695–706. https://doi.org/10.1002/job.165

Luthans, F., & Youssef-Morgan, C. M. (2017). Psychological capital: An evidence-based positive approach. *Annual Review of Organizational Psychology and Organizational Behavior*, *4*, 339–366. https://doi.org/10.1146/annurev-orgpsych-032516-113324

Luthar, S. S., & Cicchetti, D. (2000). Research on resilience: Response to commentaries. *Child Development, 71*(3), 573–575. https://doi.org/10.1111/1467-8624.00168

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*(3), 543–562. https://www.jstor.org/stable/1132374

MacKinnon, D. P., Fairchild, A. J., & Frit, M. S. (2007). Mediation analysis. *Annual Review of Psychology*, *58*(1), 563–614. https://doi.org/10.1146/annurev.psych.58.110405.085542

Matthieu, M. M., & Ivanoff, A. (2006). Using stress, appraisal, and coping theories in clinical practice: Assessments of coping strategies after disasters. *Brief Treatment & Crisis Intervention, 6*(4), 337–348. https://doi.org/10.1093/brief-treatment/mhl009

McGonigal, K. (2015). *The upside of stress: Why stress is good for you, and how to get good at it.* Avery/Penguin Random House.

Michailidis, M., & Asimenos, A. (2002). Occupational stress as it relates to higher education, individuals and organizations. *Work, 19*(2), 137–147. https://content.iospress.com/articles/work/wor00250

Montano, D., Reeske, A., Franke, F., & Huffmeier, J. (2017). Leadership, followers' mental health and job performance in organizations: A comprehensive meta-analysis from an occupational health perspective. *Journal of Organizational Behavior, 38*(3), 327–350. https://doi.org/10.1002/job.2124

Montero-Marin, J., Tops, M., Manzanera, R., Piva Demarzo, M. M., Alvarez de Mon, M., & Garcia-Campayo, J. (2015). Mindfulness, resilience, and burnout: Subtypes in primary care physicians: The possible mediating role of positive and negative affect. *Frontiers in Psychology, 6,* 1–6. https://doi.org/10.3389/fpsyg.2015.01895

Moran, K. A. (2016). Organizational resilience: Sustained institutional effectiveness among smaller, non-profit US higher education institutions experiencing organizational decline. *Work, 54*(2), 267–281. https://doi.org/10.3233/WOR-162299

Mulliner, J. (2018). *Employee engagement, motivation, resilience, and leadership: An exploration of relationships within a higher education institution* (Doctoral dissertation). British Library ETHOS (738438)

Murray, D. S. (2019). The precarious new faculty majority: Communication and instruction research and contingent labor in higher education. *Communication Education, 68*(2), 235–245. https://doi.org/10.1080/03634523.2019.1568512

Murthy, V., & Murthy, A. (2014). Adaptive leadership responses: Introduction to an emerging classification of zeitgeist enactments, practices and virtues for a VUCA. *World Journal of Entrepreneurship, Management and Sustainable Development, 10*(3), 162–176. https://doi.org/10.1108/WJEMSD-05-2013-0029

Nakamura, N., & Tsong, Y. (2019). Perceived stress, psychological functioning, and resilience among individuals in same-sex binational relationships. *Psychology of Sexual Orientation and Gender Diversity*, *6*(2), 175–181. https://doi.org/10.1037/sgd0000318

Nangia Sharma, P., & Pearsall, M. J. (2016). Leading under adversity: Interactive effects of acute stressors and upper-level supportive leadership climate on lower-level supportive leadership climate. *Leadership Quarterly, 27*(6), 856–868. https://doi.org/10.1016/j.leaqua.2016.08.003

National Institutes of Health Office of Extramural Research. (n.d.). *Protecting human research participants.* https://grants.nih.gov/sites/default/files/PHRP_Archived_Course_Materials_English.pdf

Nicolaides, A., & McCallum, D. C. (2013). Inquiry in action for leadership in turbulent times: Exploring the connections between transformative leadership and adaptive leadership. *Journal of Transformative Education, 11*(4), 246–260. https://doi.org/10.1177/1541344614540333

Nielsen, N. R., Kristensen, T. S., Schnohr, P, & Gronbaek, M. (2008). Perceived stress and cause-specific mortality among men and women: Results from a prospective cohort study. *American Journal of Epidemiology, 168*(5), 481–491. https://doi.org/10.1093/aje/kwn157

Niemiec, C. P., Brown, K. W., Kashdan, T. B., Cozzolino, P. J., Breen, W. E., Levesque-Bristol, C., & Ryan, R. M. (2010). Being present in the face of existential threat: The role of trait mindfulness in reducing defensive responses to mortality salience. *Journal of Personality and Social Psychology, 99*(2), 344–365. https://doi.org/10.1037/a0019388

Noone, P. A. (2017). The Holmes-Rahe Stress Inventory. *Occupational Medicine, 67*(7), 581–582. https://doi.org/10.1093/occmed/kqx099

Normore, A., & Brooks, J. (2014). The department chair: A conundrum of educational leadership versus management. In A. Lahera, K. Hamdan, & A., Normore (Eds.), Pathways to excellence: Developing and cultivating leaders for the classroom and beyond. *Advances in Educational Administration* (Vol. 21, pp. 3–19). Emerald. https://doi.org/10.1108/S1479-366020140000021014

Northouse, P. G. (2016). *Leadership: Theory and practice* (7th ed.). Sage.

Norton, A. R., Abbott, M. J., Norberg, M. M., & Hunt, C. (2015). A systematic review of mindfulness and acceptance-based treatments for social anxiety disorder. *Journal of Clinical Psychology, 71*(4), 283–301. https://doi.org/10.1002/jclp.22144

Olendzki, A. (2014). From Buddhist traditions to psychological science. In A. Ie, C. T. Ngnoumen, & E. J. Langer (Eds.), *Wiley handbook of mindfulness* (pp. 58–73). John Wiley & Sons.

Olpin, M., & Hesson, M. (2013). *Stress management for life: A research-based, experimental approach* (3rd ed.). Wadsworth.

Onwuegbuzie A. J., Johnson R. B., & Collins K. M. (2009). Call for mixed analysis: A philosophical framework for combining qualitative and quantitative approaches. *International Journal of Multiple Research Approaches*, *3*(2), 114–139. https://doi.org/10.5172/mra.3.2.114

Osório, C., Probert, T., Jones, E., Young, A. H., & Robbins, I. (2017). Adapting to stress: Understanding the neurobiology of resilience. *Behavioral Medicine, 43*(4), 307–322. https://doi.org/10.1080/08964289.2016.1170661

Pagnini, F., Bercovitz, K., & Langer, E. (2016). Perceived control and mindfulness: Implications for clinical practice. *Journal of Psychotherapy Integration*, *26*(2), 91–102. https://doi.org/10.1037/int0000035

Pagnini, F., & Langer, E. (2015). Mindful reappraisal: Comment on "Mindfulness broadens awareness and builds eudaimonic meaning: A process model of mindful positive emotion regulation. *Psychological Inquiry, 26*(4), 365–367. https://doi.org/10.1080/1047840X.2015.1073660

Pagnini, F., Phillips, D., Bosma, C. M., Reece, A., & Langer, E. (2016). Mindfulness as a protective factor for the burden of caregivers of Amyotrophic Lateral Sclerosis patients: Mindfulness as a protective factor. *Journal of Clinical Psychology*, *72*(1), 101–111. https://doi.org/10.1002/jclp.22235

Pajo, B. (2017). *Introduction to research methods: A hands-on approach*. SAGE Publications.

Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (6th ed.). McGraw-Hill Education.

Pepper, C., & Giles, W. (2015). Leading in middle management in higher education. *Management in Education, 29*(2), 46–52. https://doi.org/10.1177/0892020614529987

Pincus, K. V., Stout, D. E., Sorensen, J. E., Stocks, K. D., & Lawson, R. A. (2017). Forces for change in higher education and implications for accounting academy. *Journal for Accounting Education, 40,* 1–18. https://doi.org/10.1016/j.jaccedu.2017.06.001

Pirson, M. A., Langer, E., & Zilcha, S. (2018). Enabling a socio-cognitive perspective of mindfulness: The development and validation of the Langer Mindfulness Scale. *Journal of Adult Development, 25,* 168–185. https://doi.org/10.1007/s10804-018-9282-4

Preacher, K. J., & Leonardelli, G. J. (2020). *Calculation for the Sobel test: An interactive*

calculation tool for mediation tests. http://quantpsy.org/sobel/sobel.htm

Preston, D., & Floyd, A. (2016). Supporting the role of associate dean in universities: An alternative approach to management development. *Higher Education Quarterly, 70*(3), 264–280. https://doi.org/10.1111/hequ.12099

Pritchard, A., Li, J., McChesney, J., & Bichsel, J. (April 2020). *Administrators in higher education annual report: Key findings, trends, and comprehensive tables for the 2018-19 academic year* (Research report). College and University Professional Association for Human Resources. https://www.cupahr.org/surveys/results/

Powers, A. B. (2010). Multicollinearity. In B. A. Powers & T. Knapp. (Eds.), *Dictionary of nursing theory and research* (4th ed.). Spring Publishing Company.

Quaglia, J. T., Brown, K. W., Lindsay, E. K., Creswell, J. D., & Goodman, R. J. (2016). From conceptualization to operationalization of mindfulness. In K. W. Brown, J. D. Creswell, & R. M. Ryan (Eds.), *Handbook of mindfulness: Theory, research, and practice* (pp. 151–170). Guildford Press.

Querstret, D., Cropley, M., & Fife-Schaw, C. (2017). Internet-based instructor-led mindfulness for work-related rumination, fatigue, and sleep: Assessing facets of mindfulness as mechanisms of change. A randomized waitlist control trial. *Journal of Occupational Health Psychology, 22*(2), 153–169. https://doi.org/10.1037/ocp0000028

Radford, K. J. (1978). Decision-making in a turbulent environment. *Journal of the Operational Research Society, 29*(7), 677–682. https://doi.org/10.2307/3009845

Rasch, C., Hutchinson, J., & Tollefson, N. (1986). Sources of stress among administrators at research universities. *Review of Higher Education, 9*(4), 419–434. https://doi.org/10.1353/rhe.1986.0018

Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical Psychology, 58*(3), 307–321. http://doi.org/10.1002/jclp.10020

Ritchie-Dunham, J. L. (2014). Mindful leadership. In A. Ie, C. T. Ngnoumen, & E. J. Langer (Eds.), *Wiley handbook of mindfulness* (pp. 443–457). John Wiley & Sons.

Roche, M., Haar, J. M., & Luthans, F. (2014). The role of mindfulness and psychological capital on the well-being of leaders. *Journal of Occupational Health Psychology, 19*(4), 476–489. https://doi.org/10.1037/a0037183

Rosser, V. J. (2004). A national study on midlevel leaders in higher education: The unsung professionals in the academy. *Higher Education, 48*(3), 317–337. https://www.jstor.org/stable/4151520

Rossouw, J. (2019). *What is resilience? Modernising the definition of resilience*. https://home.hellodriven.com/what-is-resilience.html

Rossouw, J. (2020). *The 6 domains of resilience*. https://home.hellodriven.com/6-domains-of-resilience.html

Rossouw, J. G. (2018). *The Predictive 6-Factor Resilience Scale: Clinical guidelines and applications* (2nd ed.). RForce Pty.

Rossouw, J. G., Erieau, C. L., & Beeson, E. T. (2019). Building resilience through a virtual coach called Driven: Longitudinal pilot study and the neuroscience of small, frequent learning tasks. *International Journal of Neuropsychotherapy, 7*(2), 23–41. https://doi.org/10.12744/ijnpt.2019.023-041

Rossouw, J. G., Rossouw, P. J., Paynter, C., Ward, A., & Khnana, P. (2017). Predictive 6-Factor Resilience Scale – Domains of resilience and their role as enablers of job satisfaction. *International Journal of Neuropsychotherapy, 2*(1), 24–40. https://doi.org/10.12744/ijnpt.2017.1.0025-0040

Rossouw, P. J., & Rossouw, J. G. (2016). The Predictive 6-Factor Resilience Scale: Neurobiological fundamentals and organizational application. *International Journal of Neuropsychotherapy, 4*(1), 31–45. https://doi.org/10.1244/ijnpt.2016.0031-0045

Roulston, A., Montgomery, L., Campbell, A., & Davidson, G. (2018). Exploring the impact of mindfulness on mental wellbeing, stress and resilience of undergraduate social work students. *Social Work Education, 37*(2), 157–172. https://doi.org/10.1080/02615479.2017.1388776

Rubin, A., & Babbie, E. R. (2014). *Research methods for social work* (8th ed.). Brooks/Cole Cengage Learning.

Rupert, P. A., & Dorociak, K. E. (2019). Self-care, stress, and well-being among practicing psychologists. *Professional Psychology: Research and Practice, 50*(5), 343–350. https://doi.org/10.1037/pro0000251

Russo, S. J., Murrough, J. W., Han, M. H., Charney, D. S., & Nestler, E. J. (2012). Neurobiology of resilience. *Nature Neuroscience, 15,* 1475–1484. https://doi.org/10.1038/nn.3234

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry, 57*(3), 316–331. https://doi.org/10.1111/j.1939-0025.1987.tb03541.x

Saldaña, J., & Omasta, M. (2018). *Qualitative research: Analyzing life.* Sage.

Schmidt, B., Herr, R. M., Jarczok, M. N., Baumert, J., Lukaschek, K., Emeny, R. T., & Ladwig, K. H. (2018). Lack of supportive leadership behavior predicts suboptimal self-rated health independent of job strain after 10 years of follow-up: Findings from the population-based MONICA/HORA study. *International Archives of Occupational and Environmental Health, 91*(5), 623–631. https://doi.org/10.1007/s00420-018-1312-9

Schulte, P. A., Pana-Cryan, R., Schnorr, T., Schill, A. L., Guerin, R., Felknor, S., & Wagner, G. R. (2017). An approach to assess the burden of work-related injury, disease, and distress. *American Journal of Public Health, 107*(7), 1051–1057. https://doi.org/10.2105/AJPH.2017.303765

Schussler, D. L., DeWeese, A., Rasheed, D., DeMauro, A., Brown, J., Greenberg, M., & Jennings, P. A. (2018). Stress and release: Case studies of teacher resilience following a mindfulness-based intervention. *American Journal of Education, 125*, 1–28. https://doi.org/10.1086/699808

Schwartz, A. (2018). Mindfulness in applied psychology: Building resilience in coaching. *Coaching Psychologist, 14*(2), 98–104. https://shop.bps.org.uk/the-coaching-psychologist-vol-14-no-2-december-2018

Selingo, J. J. (2013). *College (un)bound: The future of higher education and what it means for students*. Amazon Publishing.

Selingo, J. J. (2016). 2026: *The decade ahead: The seismic shifts transforming the future of higher education.* Chronicle of Higher Education. https://store.chronicle.com/products/2026-the-decade-ahead

Selye, H. (1955). Stress and disease. *Science, 122*(3171), 625–631. https://www.jstor.org/stable/1749664

Selye, H. (1977). A code for coping with stress. *AORN Journal, 25*, 35-42. https://doi.org/10.1016/S0001-2092(07)68496-8

Selye, H. (1993). History of the stress concept. In L. Goldberger & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (2nd ed., pp. 3–6). The Free Press.

Sherman, G. D., Lee, J. J., Cuddy, A. T. C., Renshon, J., Oveis, C., Gross, J. T., & Lerner, J. S. (2012). Leadership is associated with lower levels of stress. *Proceedings of the National Academy of Sciences of the United States of America*, *109*(44), 17903–17907. http://doi.org/10.1073/pnas.1207042109

Shi, M., Wang, X., Bian, Y., & Wang, L. (2015). The mediating role of resilience in the relationship between stress and life satisfaction among Chinese medical students: A cross-sectional study. *BMC Medical Education*, *15*(1), 1–7. https://doi.org/10.1186/s12909-015-0297-2

Shin, J. C. & Jung, J. (2014). Academics job satisfaction and job stress across countries in the changing academic environments. *Higher Education*, *67*(5), 603–620. https://doi.org/10.1007/s10734-013-9668-y

Siegel, D. J. (2015). Interpersonal neurobiology as a lens into the development of well-being and resilience. *Children Australia*, *40*(2), 160–164. https://doi.org/10.1017/cha.2015.7

Siegling, A. B., & Petrides, K. V. (2016). Zeroing in on mindfulness facets: Similarities, validity, and dimensionality across three independent measures. *PLOS ONE*, *11*(4), e0153073. https://doi.org/10.1371/journal.pone.0153073

Skodol, A. (2010). The resilient personality. In J. Reich, A. Zatura, & J. Hall (Eds.), *Handbook of adult resilience*. Guilford Press.

Smith, B. (2018). *Resilience, generalized self-efficacy and mindfulness as moderators of the relationship between stress and both life satisfaction and depression among college students: An investigation of the resilience process.* (Doctoral dissertation). ProQuest Dissertation Publishing. (Accession No. 2018-11223-253)

Smith, D. L., Rollins, K. B., & Smith, L. J. (2012). Back to the faculty: Transition from university department leadership. *Innovative Higher Education, 37*(1), 53–63. https://doi.org/10.1007/s10755-011-9186-8

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology, 13*, 290–312. https://www.jstor.org/stable/270723

Spector, P. E. (2019). Do not cross me: Optimizing the use of cross-sectional designs. *Journal of Business and Psychology, 34*(2), 125–137. https://doi.org/10.1007/s10869-018-09613-8

Stickle, F. E., & Scott, K. (2016). Leadership and occupational stress. *Education, 137*(1), 27–38. https://eric.ed.gov/?id=EJ1112189

Sutcliffe, K. M., & Vogus, T. (2003). Organising for resilience. In K. Cameron, J. Dutton & R. Quinn (Eds.). *Positive organizational scholarship*. Berrett-Koehler.

Szabo, S., Tache, Y., & Somogyi, A. (2012). The legacy of Hans Selye and the origins of stress research: A retrospective 75 years after his landmark brief "Letter" to the Editor of Nature. *Stress- International Journal on the Biology of Stress, 15*(5), 472–478. https://doi.org/10.3109/10253890.2012.710919

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon/ Pearson Education.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson Education.

Talks at Harvard College. (2019, March 6). *Uncertainty and the power of possibility: Ellen Langer* [Video]. YouTube. https://www.youtube.com/watch?v=UoapzkeWnko

Teo, W. L., Lee, M., & Lim, W. S. (2017). The relational activation of resilience model: How leadership activates resilience in an organizational crisis. *Journal of Contingencies and Crisis Management, 25*(3), 136–147. https://doi.org/10.1111/1468-5973.12179

Thelin, J. R. (2011). *A history of American higher education* (2nd ed.). Johns Hopkins University Press.

Thoemmes, F., MacKinnon, D., & Reiser, M. (2010). Power analytics for complex mediational designs using Monte Carlo methods. *Structural Equation Modeling: A Multidisciplinary Journal, 17*(3), 510–534. https://doi.org/10.1080/10705511.2010.489379

Tollefson, M., Kite, B., Matuszewicz, E., Dore, A., & Heiss, C. (2018). Effectiveness of student-led stress reduction activities in the undergraduate classroom on perceived student stress. *College Student Journal, 52*(4), 505–515. https://www.questia.com/library/journal/1G1-572402028/effectiveness-of-student-led-stress-reduction-activities

Trent, N. L., Park, C., Bercovitz, K., & Chapman, I. M. (2016). Trait socio-cognitive mindfulness is related to affective and cognitive empathy. *Journal of Adult Development, 23*(1), 62–67. https://doi.org/10.1007/s10804-015-9225-2

Trochim, W. M. K., & Donnelly, J. P. (2008). *The research methods knowledge base* (3rd ed.). Cengage.

Tu, J. (2019). *Mindfulness and resilience as predictors of burnout* [Master's thesis, San Jose State University]. SJSU ScholarWorks. https://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=8594&context=etd_theses

United States Census Bureau, United States Department of Commerce. (2017). *2015 national content test race and ethnicity analysis report.* https://www.census.gov/programs-surveys/decennial-census/2020-census/planning-management/final-analysis/2015nct-race-ethnicity-analysis.html

Vilkinas, T., & Cartan, G. (2015). Navigating the turbulent waters of academia: The leadership role of programme managers. *Tertiary Education and Management, 2015*, 1–10. https://doi.org/10.1080/13583883.2015.1082189

Verdorfer, A. P. (2016). Examining mindfulness and its relations to humility, motivation to lead, and actual servant leadership behaviors. *Mindfulness, 7*(4), 950–961. https://doi.org/10.1007/s12671-016-0534-8

Wagnild, G. (2009). A review of the Resilience Scale. *Journal of Nursing Measurement, 17*(2), 105–113. https://doi.org/10.1891/1061-3749.17.2.105

Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement*, *1*(2), 165–178.

Wang, H. L. (2018, January 26). 2020 Census to keep racial, ethnic categories used in 2010. *NPR*. https://www.npr.org/2018/01/26/580865378/census-request-suggests-no-race-ethnicity-data-changes-in-2020-experts-say

Wasylkiw, L., Holton, J., Azar, R., & Cook, W. (2015). The impact of mindfulness on leadership effectiveness in a health care setting: A pilot study. *Journal of Health Organization & Management, 29*(7), 893–911. https://doi.org/10.1108/JHOM-06-2014-0099

Waszkowska, M., Jacukowicz, A., Drabek, M., & Merecz-Kot, D. (2017). Effort-reward balance as a mediator of the relationship between supplementary person-organization fit and perceived stress among middle-level managers. *International Journal of Occupational Medicine and Environmental Health, 30*(2), 305–312. https://doi.org/10.13075/ijomeh.1896.00874

Wei, Y. C. (2018). The department chair's troubles: Leadership role of middle managers. *Journal of Cases in Educational Leadership, 21*(4), 100–111. https://doi.org/10.1177/1555458918767481

White, G. W. (2014). First-year experiences of associate deans: A qualitative, multi-institutional study. *Research in Higher Education Journal, 22*, 1–29. https://files.eric.ed.gov/fulltext/EJ1064090.pdf

Wild, L. L., Ebbers, L. H., Shelley, M. C., & Gmelch, W. H. (2003). Stress factors and community college deans: The stresses of their role identified. *Community College Review, 31*(3), 1–23. https://doi.org/10.1177/009155210303100301

Wilks S. E., & Croom B. (2008). Perceived stress and resilience in Alzheimer's disease caregivers: Testing moderation and mediation models of social support. *Aging & Mental Health, 12*(3), 357–365. https://doi.org/10.1080/13607860801933323

Williams, S., & Cooper, C. L. (1998). Measuring occupational stress: Development of the Pressure Management Indicator. *Journal of Occupational Health Psychology, 3*(4), 306–321. https://doi.org/10.1037/1076-8998.3.4.306

Wolverton, M., Ackerman, R., & Holt, S. (2005). Preparing for leadership: What academic department chairs need to know. *Journal of Higher Education Policy and Management, 27*(2), 227–238. https://doi.org/10.1080/13600800500120126

Wolverton, M., Gmelch, W. H., Wolverton, M. L., & Sarros, J. C. (1999). Stress in academic leadership: U.S. and Australian department chairs/heads. *Review of Higher Education, 22*(2), 165–185. https://muse.jhu.edu/article/30073

Wolverton, M., Wolverton, M. L., & Gmelch, W. H. (1999). The impact of role conflict and ambiguity on academic deans. *Journal of Higher Education, 70*(1), 80–106. https://doi.org/10.2307/2649119

Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist, 47*(4), 302–314. https://doi.org/10.1080/00461520.2012.722805

Zaccaro, S. J., Green, J. P., Dubrow, S., and Kolze, M. J. (2018). Leader individual differences, situational, parameters, and leadership outcomes: A comprehensive review and integration. *Leadership Quarterly, 29*, 2–43. https://doi.org/10.1016/j.leaqua.2017.10.003

Zautra, A., Hall, J., & Murray, K. (2008). Resilience: A new integrative approach to health and mental health research. *Health Psychology Review, 2*(1), 41–64. https://doi.org/10.1016/j.leaqua.2017.10.003

Zgierska, A. E., Burzinski, C. A., Mundt, M. P., McClintock, A. S., Cox, J., Coe, C. L., Miller, M. M., & Fleming, M. F. (2019). Mindfulness-based relapse prevention for alcohol dependence: Findings from a randomized controlled trial. *Journal of Substance Abuse Treatment, 100*, 8–17. https://doi.org/10.1016/j.jsat.2019.01.013

Appendix A: IRB Approval

ABILENE CHRISTIAN UNIVERSITY
Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885

April 20, 2020

Rachel Slaymaker
Department of Educational Leadership
Abilene Christian University

Dear Rachel,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled "An Exploration of Socio-Cognitive Mindfulness, Resilience, and Perceived Stress: A National Study of Academic Middle-Managers in Higher Education",

(IRB# 20-040)is exempt from review under Federal Policy for the Protection of Human Subjects.

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or not the exempt status is still applicable.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs

Appendix B: Survey Email Invitation

You are invited to participate in an online survey on perceived stress, resilience, and socio-cognitive mindfulness among academic middle managers in higher education. For the purposes of this study, an academic middle manager is defined as a Dean, Associate or Assistant Dean, and a Department Chair or equivalent. The goal of this study is to explore the relationships between stress, mindfulness, and resilience during a turbulent and evolving time within higher education. At the end of the survey, there are questions that address how the recent Coronavirus (COVID-19) pandemic may have impacted your current role within higher education.

To be eligible for this study, you must be employed full-time at an accredited university or college and in one of the following leadership positions in an academic unit:

- Dean or Director (or equivalent) of an academic college
- Associate Dean/Assistant Dean/Director (or equivalent) of an academic college
- Department Chair or Director (or equivalent) of an academic program/department

If you meet the above criteria, I invite you to click the link below to confirm eligibility and participate in this study. The survey should take approximately **seven to ten minutes** to complete and includes professional/institutional demographics and personal demographics. No identifiable information is asked within the demographic questions and no IP addresses are collected. All responses will remain anonymous and be kept confidential. All responses will only be shared as part of aggregate data in support of this dissertation study.

{Insert Survey Monkey Link}

You may exit the survey, due to time constraints or discomfort, and click the link to return to the last page you completed. You must have clicked 'Next' on the page to complete. Should questions arise, please contact me at XXXXX.

Accessibility for persons with disabilities: This electronic survey is compatible with most screen reading technology.

Thank you in advance for your participation.

Appendix C: Inclusionary Criteria

(First page of SurveyMonkey online survey):

To review the informed consent and begin the survey, you must click each statement below confirming you meet the following eligibility criteria:

☐ I confirm that I am a full-time employee at a regionally-accredited higher education institution within the United States.

☐ I confirm that my institution awards degrees at the level of bachelor's degree or higher.

Please select only one:

I confirm that I am currently employed in one of the following academic middle-management positions:

- ☐ Dean (or equivalent) of an Academic College/School
- ☐ Associate Dean or Assistant Dean (or equivalent) of an Academic College/School
- ☐ Department Chair or Director (or equivalent) of an Academic Department/Program

Appendix D.1: Permission to Use Perceived Stress Scale (PSS-10)

PERMISSION FOR USE OF THE PERCEIVED STRESS SCALE

I apologize for this automated reply. Thank you for your interest in our work.

PERMISSION FOR USE BY STUDENTS AND NONPROFIT ORGANIZATIONS: If you are a student, a teacher, or are otherwise using the Perceived Stress Scale (PSS) without making a profit on its use, you have my permission to use the PSS in your work. Note that this is the only approval letter you will get. I will not be sending a follow-up letter or email specifically authorizing you (by name) to use the scale.

PERMISSION "FOR PROFIT" USE: If you wish to use the PSS for a purpose other than teaching or not for profit research, or you plan on charging clients for use of the scale, you will need to see the next page: "Instructions for permission for profit related use of the Perceived Stress Scale".

QUESTIONS ABOUT THE SCALE: Information concerning the PSS can be found at https://www.cmu.edu/dietrich/psychology/stress-immunity-disease-lab/index.html (**click on scales on the front page)**. Questions about reliability, validity, norms, and other aspects of psychometric properties can be answered there. The website also contains information about administration and scoring procedures for the scales. Please do not ask for a manual. There is no manual. Read the articles on the website for the information that you need.

TRANSLATIONS: The website (see URL above) also includes copies of translations of the PSS into multiple languages. These translations were done *by other investigators*, not by our lab, and we take no responsibility for their psychometric properties. If you translate the scale and would like to have the translation posted on our website, please send us a copy of the scale with information regarding its validation, and references to relevant publications. If resources are available to us, we will do our best to post it so others may access it.

Good luck with your work.

Sheldon Cohen
Robert E. Doherty University Professor of Psychology
Department of Psychology
[redacted]

Appendix D.2: Permission to Use the Langer Mindfulness Scale (LMS-14)

myACU powered by Google [redacted]

Permission to Include Langer Mindfulness Scale in Dissertation

Langer, Ellen J. [redacted] Sat, Jun 13, 2020 at 11:32 AM
To: Rachel Slaymaker [redacted]
Cc: [redacted]

Hi Rachel,
Please do not include the whole scale in your appendices. You can include examples of a couple of items. Thanks. Mindfully yours, Ellen Langer
Sent from my iPhone

On Jun 13, 2020, at 11:04 AM, Rachel Slaymaker <[redacted]> wrote:

Dear Dr. Pirson and Dr. Langer,

I hope all is well with you. I am a doctoral student conducting dissertation research on socio-cognitive mindfulness, resilience, and perceived stress among academic middle managers in U.S. higher ed institutions.

I am asking permission to use and include the full 14-item LMS as an appendix in my dissertation. I retrieved the scale from the following publication:

Pirson, M. A., Langer, E., & Zilcha, S. (2018). Enabling a socio-cognitive perspective of mindfulness: The development and validation of the Langer Mindfulness Scale. *Journal of Adult Development, 25,* 168-185. https://doi.org/10.1007/s10804-018-9282-4

There is no indication that this scale is covered under fair use, and I found no documentation that it is public domain so I want to confirm that I may publish it in my dissertation manuscript.

Thank you in advance for your assistance,

Rachel

--
Rachel Slaymaker, LMSW, EdD Candidate
Associate Professor
Director of Field Education
Associate Director of the School of Social Work
Abilene Christian University
[redacted]

Appendix D.3: Permission to Use the Predictive 6-Factor Resilience Scale (PR6)

myACU powered by Google [redacted]

Permission to Use Figure and Scale in Dissertation

Jurie Rossouw [redacted]
To: Rachel Slaymaker [redacted]

Mon, Jun 15, 2020 at 4:04 AM

Hi Rachel

Glad to hear you are progressing!

You're welcome to use the image alongside a reference to our website where it's published.

As for appending the PR6, this must not be done as it is a commercial product and is not to be published anywhere. You'll notice the same with some other scales as well to help protect the intellectual property.

Hope that makes sense!

Jurie Rossouw
CEO - Driven

M: [redacted]

driven

On Sun, Jun 14, 2020 at 12:46 AM Rachel Slaymaker <[redacted]> wrote:

> Dear Mr Rossouw,
>
> I hope all is well with you. First, I want to thank you for sharing the P6R research pack with me in 2019 so I could use the 16-item instrument for my dissertation on mindfulness, resilience, and perceived stress among academic middle managers in U.S. higher ed institutions. I am in the process of writing my findings, and the results are very promising.
>
> I am asking permission to use the image below as a figure in my dissertation manuscript:
> https://home.hellodriven.com/6-domains-of-resilience.html
>
> I am also requesting permission to include the full 16-item P6R scale as an appendix in my dissertation.
>
> Thank you in advance for your assistance,
>
> Rachel
>
> --
> Rachel Slaymaker, LMSW, EdD Candidate
> Associate Professor
> Director of Field Education
> Associate Director of the School of Social Work
> Abilene Christian University
> [redacted]

Appendix E: Demographic Questions

Position-Level Demographics

Select the option that best describes your current leadership position:

- ☐ Dean or Director (or equivalent) of an Academic College/School
- ☐ Associate Dean or Assistant Dean (or equivalent) of an Academic College/School
- ☐ Department Chair or Director (or equivalent) of an Academic Department/Program
- ☐ Other _____

If you are a Dean, Associate/Assistant Dean or equivalent, please enter the type of college in which you hold your current leadership position. (Ex., College of Education and Human Services)

[Insert text box]

If you are a Dean, Associate/Assistant Dean or equivalent, what is the highest degree awarded within your specific college?

- ☐ Doctorate
- ☐ Masters
- ☐ Bachelors

If you are a Department Chair or equivalent, please enter the type of department/program in which you hold your current leadership position. (Ex., Department of Communication)

[Insert text box]

If you are a Department Chair or equivalent, what is the highest degree awarded within your department/program?

- ☐ Doctorate
- ☐ Masters
- ☐ Bachelors

Please provide the length of time you have been in your current leadership position.
Enter number of years (if one year or more) or months (if less than one year).

Years [Insert text box]
Months [Insert text box]

Institutional Demographics

Please select the type of Institution:

- ☐ Private, For-Profit Institution
- ☐ Private, Not-for-Profit Institution
- ☐ Public Institution

Select the range that best describes your institution's current student population enrollment (university-wide):

- ☐ Fewer than 5,000 students
- ☐ 5,000 to 15,000 students
- ☐ More than 15,000 students

What is your institution's basic Carnegie classification during the 2019-20 academic year?

- ☐ Doctoral university
- ☐ Master's college or university
- ☐ Baccalaureate College
- ☐ Baccalaureate/Associate's College
- ☐ Special Focus: Four -Year Institution
- ☐ Tribal College
- ☐ I do not know my institution's Carnegie Classification (To search for your institution and find out the Carnegie classification, click the following link: https://carnegieclassifications.iu.edu/lookup/lookup.php)

Personal Demographics

Age

- ☐ Under 30 years of age
- ☐ 30-39 years of age
- ☐ 40-49 years of age
- ☐ 50-59 years of age
- ☐ 60-69 years of age
- ☐ 70 years of age or over
- ☐ I do not care to disclose

Gender

- ☐ Female
- ☐ Male
- ☐ Non-Binary
- ☐ Transgender
- ☐ Gender Nonconforming

☐ I prefer not to describe
☐ I do not care to disclose
☐ Other _____

Ethnicity/Race (Select all that apply)

☐ American Indian or Alaska Native
☐ Asian/Asian American
☐ Black/African American
☐ Hispanic/Latino or Spanish origin
☐ Middle Eastern or North African (MENA)
☐ Native Hawaiian or Pacific Islander
☐ White
☐ Other
☐ I do not care to disclose

Appendix F: Questions Related to the Recent COVID-19 Pandemic

The following questions address how the recent Coronavirus (COVID-19) pandemic may have impacted your job responsibilities within higher education.

1. Prior to COVID-19, the primary method of educational delivery in your college/ program was:
   - ☐ Face-to-Face/Residential
   - ☐ Fully Online
   - ☐ Hybrid/Blended
   - ☐ Other _____

2. Before the COVID-19 pandemic, what percentage of your daily work activities did you complete remotely? (Participants will be able to using a sliding scale for this item.)

   0% 50% 100%

3. Since the COVID-19 pandemic, what percentage of your daily work activities are now completed remotely? (Participants will be able to using a sliding scale for this item.)

   0% 50% 100%

Next, please consider your level of satisfaction with how your institution facilitated the transition to the online environment so that you could complete your work tasks online/remotely. (Note: Please select N/A if all of your work was completed remotely prior to the COVID-19 pandemic.)

4. How satisfied are you with the following areas below provided by your institution during this transition:

Provided by Your Institution	Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	N/A
Overall Institutional Support						
Quality of Communication						
Training opportunities						
Practical Guidelines or Tips						

Personnel Resources (e.g., access to instructional designers, consultants, etc.)						
Quality of Online Tools for Teaching and Learning (e.g., Canvas, Blackboard, etc.)						
Quality of Online Tools for Connecting with Others (e.g., Zoom, Google Hangout Meet, etc.)						

Comments: [Insert comment box]

5. The items below assess your level of stress since the COVID-19 pandemic has occurred.

	Not at all	Increased Slightly	Increased Somewhat	Increased Moderately	Increased Significantly
How much has your stress level increased at work since COVID-19?					
How much has your overall stress level increased since COVID-19?					

Comments: [Insert comment box]