The Predictive Relationship Between Psychological Capital and Academic Burnout in Post-Graduate Students

Submitted by

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Benjamin M. Radack — 6/19/19

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Abstract

The purpose of this quantitative correlational study was to determine if, or to what extent, the composite and sub-composite categories of Psychological Capital (PsyCap) predict Academic Burnout in American post-graduate health science students at a university in the Southeastern United States. The variables of the study were measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS). A convenience sampling method was used to collect data from the target population, which included a final sample of 90 health science post-graduate students. Based on the theoretical framework of Academic Burnout and Psychological Capital, one research question and five hypotheses were examined and answered in this study. A simple linear regression analysis revealed that PsyCap was a significant and negative predictor of Academic Burnout ($F(1,88) = 12.00, p < .001, R^2 = 0.12; B = -0.28, t(88) = -3.46, p < .001$). Additionally, multiple linear regression analysis revealed that only one sub-category of PsyCap, labeled as Optimism, was a significant and negative predictor of Academic Burnout ($F(4,85) = 5.17, p < .001, R^2 = 0.20; B = -0.90, t(85) = -3.17, p = .002$). The findings may be used by higher education instructors, advisors, and administrators in the United States to adopt policies, practices, programs, student advising, and student mentorship that fosters PsyCap and Optimism development in students, which may mitigate the risks and consequences of Academic Burnout.

Keywords: Academic Burnout, Competence, Cynicism, Efficacy, Exhaustion, Hope, Maslach Burnout Inventory-Student Survey (MBI-SS), Optimism, post-graduate students, Psychological Capital, Psychological Capital Questionnaire (PCQ-24), and Resilience.

Dedication

I would like to dedicate this to my past, present, and future students. Each of you has contributed greatly to this research project and have taught me so much. I truly believe that the results of this study will help me to better serve you as an instructor, advisor, administrator, and mentor.

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Chapter 1: Introduction to the Study

Introduction

Burnout syndrome is a condition that is associated with distinct characteristics. Emotional exhaustion and cynicism play a significant role in burnout syndrome. Several authors contend that emotional exhaustion will often lead individuals to a state of depersonalization during interactions with others, as well as reducing the quality and personal accomplishment of their work (Back, Steinhauser, Kamal, & Jackson, 2016; Cañadas-De la Fuente et al., 2018; Maslach & Jackson, 1981). Burnout syndrome is common to individuals that frequently engage in intense interaction with other people (Maslach & Jackson, 1981). A number of authors have examined the relationship between occupational burnout and individuals in health professions (Arrogante & Aparicio-Zaldivar, 2017; Back et al., 2016; Kutluturkan et al., 2016; Lebares et al., 2018; Panagioti, Geraghty, & Johnson, 2018), establishing that burnout syndrome is a common occurrence in individuals that work in health professions. Much of the literature related to burnout syndrome is specific to the work environment (Arrogante & Aparicio-Zaldivar, 2017; Back et al., 2016; Kutluturkan et al., 2016; Lebares et al., 2018; Panagioti et al., 2018). However, a school can be considered the context-specific environment from which students work (Salmela-Aro, Kiuru, Pietikäinen, & Jokela, 2008). Burnout syndrome specific to the education environment is termed Academic Burnout (Bikar, Marziyeh, & Pourghaz, 2018; Neumann, 1990; Salmela-Aro et al., 2008). There has been a significant expansion of study relative to Academic Burnout.

There are several important findings in the literature relative to Academic Burnout. Academic Burnout is commonly associated with a state of exhaustion related to

the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008). These three characteristics of Academic Burnout described by Salmela-Aro et al. (2008) have been labeled as Exhaustion, Cynicism, and Competence in seminal work by Schaufeli, Martinez, Pinto, Salanova, and Bakker (2002), which examined the validity and reliability of the student survey version of Maslach Burnout Inventory. Previous research indicates that Academic Burnout is associated with behavioral incivility in the classroom, low levels of motivation, and poor academic performance (Rad, Mirhaghi, & Shomoossi, 2015; Rad, Shomoossi, Rakhshani, & Sabzevari, 2017). Thus, research that identifies constructs that may reduce the potential for students to experience Academic Burnout is beneficial. Psychological Capital (PsyCap) is a positive psychology construct consisting of Hope, Efficacy, Resilience, and Optimism sub-categories (Luthans, Avolio, Avey, & Norman, 2007). PsyCap is a construct associated with reduced occupational stress (Rabenu & Yaniv, 2017; Wang et al., 2017), improved worker engagement and well-being (Adil & Kamal, 2016), and reduced burnout syndrome in the workplace (Wang et al., 2017; Yim, Seo, Cho, & Kim, 2017). Based on the negative correlation between Psychological Capital and burnout syndrome in the workplace, there may be value in examining the relationship between Psychological Capital and Academic Burnout in the educational environment.

Previous literature has studied the relationship between PsyCap and Academic Burnout. PsyCap has been negatively correlated with Academic Burnout in medical students in Iran (Rad et al., 2017). Despite finding a significant relationship between PsyCap and Academic Burnout, Rad et al. noted that a substantial limitation to their study

involved a sample of participants from a single university in Iran that reduced the generalizability of the findings. Thus, Rad et al. recommend further investigation of the relationship between PsyCap and Academic Burnout in other countries. Based on this gap in the literature, this study investigated whether a predictive relationship exists between PsyCap and Academic Burnout in American post-graduate students in the College of Health Sciences at a Southeastern university. By examining the predictive relationship between PsyCap and Academic Burnout in post-graduate students, the findings may be important to higher education leaders and administrators by potentially identifying areas of development and intervention that protect students from experiencing Academic Burnout.

The remaining components of this chapter will present an outline of the structure and focus of the research study. Specifically, Chapter 1 includes the background of the study, the problem statement, the purpose of the study, the research questions, and associated hypotheses. Additionally, this chapter contains a discussion on advancing the scientific knowledge and significance of the study. Also, the researcher will provide a rationale for the research methodology and design. Chapter 1 will conclude with the definitions of key terms, assumptions, limitations, and delimitations followed with a summary and organization of the remainder of the study.

Background of the Study

Burnout syndrome is a significant condition relative to the healthcare industry. For example, burnout syndrome is a common occurrence in healthcare professions, including nurses (Arrogante & Aparicio-Zaldivar, 2017; Kutluturkan et al., 2016) and physicians (Back et al., 2016; Panagioti et al., 2018). Additionally, medical students,

trainees, and most medical specialty professionals examined commonly experience burnout syndrome (Lebares et al., 2018). For example, over 40% of healthcare professionals in front-line medical settings (family medicine, emergency medicine, critical care medicine, and general internal medicine) experience burnout syndrome (Mealer et al., 2016). Initially, burnout syndrome was argued to be specific to employees in the human services domain (health care, education, and social work, among others) in which employees perform some aspect of people work (Maslach & Jackson, 1981).

However, burnout syndrome is associated with populations outside of the human services domain, such as undergraduate and post-graduate university students (Balogun, Helgemoe, Pellegrini, & Hoeberlein, 1995; Balogun, Helgemoe, Pellegrini, & Hoeberlein, 1996; Gold & Michael, 1985; Schaufeli et al., 2002). For example, burnout syndrome in the student population, termed Academic Burnout (Bikar et al., 2018; Neumann, 1990; Salmela-Aro et al., 2008), was found to be prevalent in education graduate students with student-teaching responsibilities (Gold & Michael, 1985). Academic Burnout was also commonplace in senior physical therapy post-graduate students (Balogun et al., 1996), secondary school students (Salmela-Aro et al., 2008), and post-graduate medical students (Rad et al., 2017). Thus, the prevalence of burnout syndrome relative to both the workplace and academic environments ought to be of significance for both current and aspiring healthcare professionals.

There have been significant inconsistencies in the findings of factors related to burnout syndrome. Age has frequently been studied with inconsistent findings as to its relationship with burnout syndrome (Amoafo, Hanbali, Patel, & Singh, 2015; Arrogante & Aparicio-Zaldivar, 2017; De la Fuente-Solana et al., 2017; Gómez-Urquiza, Vargas,

De la Fuente, Fernandez-Castillo, & Cañadas-De la Fuente, 2017; Gouveia et al., 2017; Guo, Guo, Yang, & Sun, 2015; Kandelman, Mazars, & Levy, 2017; Sanfilippo et al., 2017). Some authors have purported that inexperience relative to a particular field is associated with burnout syndrome (Iorga et al., 2017; Kutluturkan, Sozeri, Uysal, & Bay, 2016; McKinley, Boland, & Mahan, 2017). Gender has also been frequently studied with inconsistent findings as to its relationship with burnout syndrome (Adriaenssens, De Gucht, & Maes, 2015; Amoafo et al., 2015; Arrogante & Aparicio-Zaldivar, 2017; De la Fuente-Solana et al., 2017; Gouveia et al., 2017; Kandelman et al., 2017; Lebares et al., 2018; McKinley et al., 2017; Nowakowska-Domagala, Jablkowska-Górecka, Kostrzanowska-Jarmakowska, Mortoń, & Stecz, 2015; Sanfilippo et al., 2017).

Additionally, marital status has inconsistent findings as to its relationship with burnout syndrome in the current literature (Amoafo et al., 2015; De la Fuente-Solana et al., 2017; Gómez-Urquiza et al., 2017; Gouveia et al., 2017). Higher levels of stress, anxiety, and depression are associated with burnout syndrome (Lebares et al., 2018; Pereira-Lima & Loureiro, 2015; Upadyaya, Vartiainen, & Salmela-Aro, 2016). Other factors that have a relationship with increased burnout syndrome include long work hours, low job satisfaction, and decreased health and wellness strategies, such as participation in routine exercise, medical care practices and getting enough sleep (Amoafo et al., 2015; Iorga et al., 2017). Therefore, the inconsistency in the findings relative to factors associated with burnout syndrome may make this condition challenging to predict.

In addition, Academic Burnout may lead to undesirable outcomes. For example, Academic Burnout has been found to have negative consequences, such as decreased

student engagement and academic performance (Schaufeli et al., 2002). Rad et al. (2015) also found that Academic Burnout resulted in lower academic performance, as well as decreased student motivation and incivility in the classroom. Academic Burnout is commonly related to a state of exhaustion associated with the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008). Several factors reduce the risk of students experiencing Academic Burnout. Salmela-Aro et al. (2008) found that when students perceived their teachers as positive and motivational, the risk of students experiencing Academic Burnout lessened. Positive affect, or the extent to which a person has an enjoyable, alert, and engaged type of personality, decreased an individual's risk of Academic Burnout (Bikar et al., 2018). Additionally, Resilience is a trait that has been correlated with a decreased risk of developing Academic Burnout (Ying, Wang, Lin, & Chen, 2016). Thus, it may be of importance to identify any additional factors that may prevent the negative consequences associated with Academic Burnout.

One additional factor associated with Academic Burnout that may be of benefit to examine further is Psychological Capital (PsyCap). An association between the Hope, Efficacy, Resilience, and Optimism constructs of PsyCap and Academic Burnout has been established (Rad et al., 2017). Rad et al. conducted a quantitative correlational study to investigate the predictive relationship between Psychological Capital and Academic Burnout. A sample of 172 medical students from an Iranian university completed two self-report questionnaires, one to measure Psychological Capital and one to measure Academic Burnout (Rad et al., 2017). A significant negative predictive relationship between Academic Burnout and Psychological Capital was found, including two sub-

variable components (Exhaustion = -0.762; Cynicism = -0.740) (Rad et al., 2017). The third sub-variable (Inefficacy) was found to have a positive but insignificant relationship with PsyCap (Inefficacy = 0.190) (Rad et al., 2017). Rad et al. noted that a significant limitation to the study involved a sample of participants from a single university in Iran that reduced the generalizability of the findings. Thus, further investigation of the relationship between Psychological Capital and Academic Burnout in a student population outside of the country of Iran is warranted (Rad et al., 2017). Therefore, this study examined if, or to what extent, the composite and sub-composite categories of Psychological Capital predict Academic Burnout in American post-graduate health science students at a university in the Southeastern United States.

Problem Statement

It was not known if, or to what extent, a significant predictive relationship exists between the composite and sub-categorical levels of Psychological Capital and Academic Burnout in American post-graduate students. Hope, Efficacy, Resilience, and Optimism constructs of PsyCap will be measured by the Psychological Capital Questionnaire (PCQ-24), which utilizes Likert scale items with an ordinal level of measurement. Exhaustion, Cynicism, and Competence constructs of Academic Burnout will be measured by the Maslach Burnout Inventory-Student Survey (MBI-SS), which uses Likert scale items with an ordinal level of measurement. For this study, Likert scale ratings associated with the MBI-SS and the PCQ-24 will be treated as continuous data to meet assumptions of multiple linear regression analysis. The use of Likert scale items as continuous data have been previously established and accepted in literature related to the MBI-SS and the PCQ-24 (Bernstein & Volpe, 2016; Bikar et al., 2018; Ding et al., 2015; Kristanto, Chen,

& Thoo, 2016; Rad et al., 2017; Wang et al., 2017). The unit of analysis and the unit of observation in this study is post-graduate health science students from a university in the Southeastern United States.

Academic Burnout is prevalent among university students. For example, Santen, Holt, Kemp, and Hemphill (2010) conducted a quantitative correlational study examining the prevalence of Academic Burnout in a sample of 249 medical students. Santen et al. found that 21% of first-year students, over 40% of second- and third-year students, and 31% of fourth-year students experienced a moderate or high degree of Academic Burnout in medical school. In addition to significant prevalence, Academic Burnout has been found to have negative consequences. These consequences include decreased student engagement (Schaufeli et al., 2002), lower academic performance, reduced student motivation and incivility in the classroom (Asayesh et al., 2016; Rad et al., 2015; Rad et al., 2017). Further, research has shown that Academic Burnout is correlated with a state of exhaustion associated with the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008). In summary, Academic Burnout is a significant societal problem due to its prevalence and associated negative consequences in the educational setting.

Thus, it is essential to conduct research that examines constructs that may reduce the potential for students to experience the negative consequences of Academic Burnout. Previous research has indicated that a negative relationship exists between Psychological Capital and Academic Burnout (Rad et al., 2017). However, these findings are limited in generalizability outside of the Iranian student population (Rad et al., 2017). Rad et al. recommended further study of the relationship between PsyCap and Academic Burnout

in university students outside the country of Iran. Therefore, this study examined the predictive relationship between the composite and sub-categorical levels of PsyCap and Academic Burnout in American post-graduate health science students at a university in the Southeastern United States.

Purpose of the Study

The purpose of this quantitative correlational study was to determine if, or to what extent, the composite and sub-composite categories of Psychological Capital predict Academic Burnout in American post-graduate health science students at a university in the Southeastern United States. The predictor variables of the study included the composite score of Psychological Capital and the sub-composite scores of each construct of Psychological Capital. The sub-composite categories of PsyCap include Hope, Efficacy, Resilience, and Optimism constructs. The researcher measured the composite and sub-composite categories of PsyCap using the Psychological Capital Questionnaire (PCQ-24) (Luthans, Youssef, & Avolio, 2007). The criterion variable of the study was Academic Burnout, which was measured by the Maslach Burnout Inventory-Student Survey (MBI-SS) (Breso, Salanova, & Schaufeli, 2007). Please refer to Table 1 for a summary of the definitions of the study variables.

Table 1.

Definition of Study Variables

Variable	Predictor or Criterion	Conceptual Definition	Operational Definition	Statistical Level of Measurement
PsyCap	Predictor	Grounded in Positive Psychology Theory and characterized by Hope, Efficacy, Resilience, and Optimism constructs (Luthans, Youssef, & Avolio, 2007, p. 3)	Aptitude level as measured by the PCQ-24	Ordinal data but treated as continuous based on previous literature
Hope	Predictor	Hope is a positive motivational state that intentional goal-directed energy (agency) and its associated pathways will lead to accomplishing established goals (Snyder et al., 1991, p. 287).	Aptitude level as measured by the PCQ-24	Ordinal data but treated as continuous based on previous literature
Efficacy	Predictor	The perceived belief that one's capabilities directly lead to the successful planning and completion of a specific course of action (Bandura, 1997, p. 3).	Aptitude level as measured by the PCQ-24	Ordinal data but treated as continuous based on previous literature
Resilience	Predictor	Resilience is a series of personal assets or resources that predict positive adaptation and success in the face of significant adversity (Masten, 2001).	Aptitude level as measured by the PCQ-24	Ordinal data but treated as continuous based on previous literature
Optimism	Predictor	Optimism is a belief acknowledging that positive outcomes and events are realistic based on evaluations of internal and external attributions (Seligman, 1998; Seligman & Csikszentmihalyi, 2000).	Aptitude level as measured by the PCQ-24	Ordinal data but treated as continuous based on previous literature
Academic Burnout	Criterion	Grounded in Maslach and Jackson's (1981) theory of Burnout Syndrome characterized by the three-construct model of Exhaustion, Cynicism, and Competence in students within an educational setting (Schaufeli et al., 2002).	Severity level as measured by the MBI-SS	Ordinal data but treated as continuous based on previous literature

In a study by Rad et al. (2017), PsyCap and Academic Burnout were found to exhibit a negative relationship with each other, indicating that as levels of PsyCap increase, the expression of Academic Burnout decreases. However, further study of the

relationship between PsyCap and Academic Burnout in a student population outside of Iran has been recommended (Rad et al., 2017). This recommendation served as the foundational gap in the literature for the premise of this study. The population for the study included active students in post-graduate studies within the College of Health Sciences at a university in the Southeastern United States. A minimum of 85 participants from the target population was needed based on a power of 0.80 ($\beta = 0.80$), a significance level of 0.05 ($\alpha = 0.05$), and an effect size of 0.15 ($\rho = 0.15$), which is summarized in Appendix E. A total of 96 participants from the target population was achieved in this study, which is above the minimum required by a priori analysis.

The findings of this study deepen the understanding of the relationship between PsyCap and Academic Burnout, particularly regarding the predictive capacity of PsyCap and its associated constructs to the risk of Academic Burnout. The study contributes to the existing literature by extending the understanding of the predictive relationship between the Hope, Efficacy, Resilience, and Optimism constructs of PsyCap and Academic Burnout to a target population in the United States. Finally, this study adds value to the field by promoting future research that examines whether interventions related to PsyCap development could protect students from experiencing Academic Burnout.

Research Questions and/or Hypotheses

Academic Burnout is associated with adverse consequences for students. The negative consequences associated with Academic Burnout include exhaustion related to the demands of school work, a cynical and detached attitude toward school, and feelings of inadequacy and inefficacy as a student (Salmela-Aro et al., 2008). Grounding this

study is the theoretical underpinning of Academic Burnout, which is characterized by Exhaustion, Cynicism, and Competence constructs (Schaufeli et al., 2002). Further framing this study is the theoretical background of Psychological Capital (PsyCap), which is grounded in positive psychology and is characterized by Hope, Efficacy, Resilience, and Optimism (Luthans, Youssef, & Avolio, 2007). To fully understand whether a predictive relationship existed between PsyCap and Academic Burnout, appropriate research questions were of vital importance. The research questions and associated hypotheses directly related to the problem statement by examining the relationship between PsyCap and Academic Burnout, including each of the sub-variable components of PsyCap (Hope, Efficacy, Resilience, and Optimism). The following research questions and hypotheses served as a guide for this study:

RQ1: Does Psychological Capital (PsyCap) and its associated constructs of (a) Hope, (b) Efficacy, (c) Resilience, and (d) Optimism, predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS)?

$H_0$1: The composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_1: The composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the

Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$2: The Hope sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_2: The Hope sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$3: The Efficacy sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_3: The Efficacy sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$4: The Resilience sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_4: The Resilience sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$5: The Optimism sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_5: The Optimism sub-composite score Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

Advancing Scientific Knowledge and Significance of the Study

Previous literature related to Psychological Capital has commonly involved employees in occupational settings. PsyCap has been associated with reduced occupational stress (Rabenu & Yaniv, 2017; Wang et al., 2017), improved worker engagement and well-being (Adil & Kamal, 2016), and reduced burnout syndrome in the workplace (Wang et al., 2017; Yim et al., 2017). However, an empirical study by Rad et al. (2017) has extended the current knowledge base of PsyCap from an occupational setting to the academic environment. PsyCap was found to be negatively predictive with Academic Burnout in medical students in Iran (Rad et al., 2017). Despite identifying a meaningful predictive relationship between PsyCap and Academic Burnout, Rad et al. noted that a significant limitation of the study involved a sample of participants from a

single university in Iran that reduced the generalizability of the findings. Rad et al. recommend further study of the relationship between PsyCap and Academic Burnout in other countries. This recommendation served as the foundational premise for this study.

Thus, a gap existed as to the predictive relationship of the Hope, Efficacy, Resilience, and Optimism constructs of PsyCap and Academic Burnout in students specific to the United States. Based on this gap in the literature, this study investigated whether PsyCap and its constructs predict Academic Burnout in American post-graduate health science students. This study directly addressed the gap and contributed to the existing literature by extending the understanding of the potential predictive relationship of PsyCap and its constructs with Academic Burnout in American post-graduate health science students. This study further deepens the knowledge base of the theoretical underpinning of Psychological Capital by examining the predictive relationship between Academic Burnout and Hope, Efficacy, Resilience, and Optimism constructs (Luthans, Youssef, & Avolio, 2007). Finally, this study adds value to students attending post-graduate programs in the United States by determining whether a predictive relationship exists between PsyCap and its constructs and Academic Burnout in an environment that directly relates to these students.

This study also contributes to the existing literature related to the theoretical underpinning of Academic Burnout. Schaufeli et al. (2002) posited that the three primary characteristics of Academic Burnout are Exhaustion, Cynicism, and Competence constructs. Academic Burnout is associated with adverse consequences, such as decreased student engagement (Schaufeli et al., 2002), lower academic performance, reduced student motivation and incivility in the classroom (Rad et al., 2015).

Examination of the predictive relationship between PsyCap and Academic Burnout deepens the knowledge base of literature related to Academic Burnout. One practical implication of this study may be that the findings promote future research that examines whether interventions pertaining to PsyCap development could protect students from experiencing Academic Burnout. Additionally, the results may influence higher education leaders and administrators in policymaking designed to reduce the potential for students to experience Academic Burnout. Finally, researching the predictive relationship between PsyCap and Academic Burnout may have practical implications for post-graduate faculty and administrators with regards to student advising and mentorship practices targeted at preventing the negative consequences of Academic Burnout among students.

Rationale for Methodology

The researcher implemented a quantitative methodology to examine whether PsyCap is a predictor of Academic Burnout in American post-graduate health science students. The quantitative methodology has been utilized in previous research related to the variables of Psychological Capital and burnout syndrome (Rad et al., 2015; Rad et al., 2017; Wang et al., 2017; Yim et al., 2017). A quantitative research methodology is beneficial for predicting social phenomena in a controlled setting to facilitate justification, or the replication of predictable explanations (Park & Park, 2016). A quantitative methodology commonly includes objective measurements in the testing and examination of theories, variables, and hypotheses (Fraenkel, Wallen, & Hyun, 2015). A quantitative methodology commonly involves the statistical analysis of a sample of individuals that generate numerical results, which can often be generalized to a larger

population (Fraenkel et al., 2015). This study investigated the potential predictive relationship of PsyCap and Academic Burnout in American post-graduate health science students. Therefore, the purpose of this study aligned with the scope of justification as defined by Park and Park (2016). Thus, the quantitative methodology was the most appropriate selection based on the research question and associated hypotheses for this study.

Conversely, qualitative research methodology is typically descriptive and exploratory. Qualitative research is beneficial to examine the descriptive accounts of social phenomena in a natural setting to facilitate discovery, or the formation of concepts and hypotheses (Park & Park, 2016). A qualitative methodology commonly provides explanatory descriptions and detailed accounts as to why relationships exist, rather than present validation as to whether or not a relationship is present (Fraenkel et al., 2015). This study examined the potential predictive relationship between PsyCap and Academic Burnout in American post-graduate health science students. Therefore, the qualitative methodology was inappropriate for this study based on the research question and associated hypotheses.

Nature of the Research Design for the Study

The researcher implemented a correlational research design to examine whether PsyCap is a predictor of Academic Burnout in American post-graduate health science students. Previous empirical research has utilized a correlational design to examine the predictive relationship between Psychological Capital and Academic Burnout. Rad et al. (2017) conducted a study investigating the prediction between the variable Psychological Capital, and the variables of Academic Burnout and its associated constructs of

Exhaustion, Cynicism, and Inefficacy. Rad et al. conducted a multiple regression analysis and found a significant predictive relationship between Academic Burnout and PsyCap. The findings indicated that as Psychological Capital increases, the risk of Academic Burnout, Exhaustion, and Cynicism decreases, while Inefficacy increases. A correlational design is typically used to investigate the potential relationship between predictor and criterion variables (Lund Research Ltd., 2018). The correlation design commonly allows the researcher to draw from the results of the study as to whether the variables are unrelated, positively related, or negatively related (Lund Research Ltd., 2018). Since this study investigated whether PsyCap and its four associated constructs are predictor variables of Academic Burnout, a correlational design with multiple linear regression analysis was the most appropriate selection based on the research question and associated hypotheses.

True experimental, quasi-experimental, and causal-comparative are other common types of quantitative research designs considered for this study. In a true experimental design, the researcher typically manipulates the independent variable, incorporates elements of control, and randomly assigns participants into different comparison groups (Portney & Watkins, 2009). The researcher for this study did not implement randomized assignment into comparison groups, nor manipulate the independent variable. Therefore, the researcher could not select a true experimental design for this study. Consequently, a cause-and-effect relationship in this study cannot be established (Portney & Watkins, 2009). A quasi-experimental design also could not be utilized in this study as a quasi-experimental design typically incorporates manipulation of the independent variable, commonly through a type of intervention or treatment

(Portney & Watkins, 2009). Finally, when a researcher is attempting to determine the reasons for individual and group differences, a causal-comparative design is frequently implemented (Fraenkel et al., 2015). Additionally, while both correlational and causal-comparative designs incorporate ex post facto data, the causal-comparative design consists of a nominal independent variable (Fraenkel et al., 2015; Portney & Watkins, 2009). As this study investigated the relationship between scalar predictor and criterion variables, a causal-comparative design was not appropriate for this study based on the research question and associated hypotheses.

The target population for this study included active students enrolled in post-graduate studies within the College of Health Sciences at a university in the Southeastern United States. A minimum of 85 participants from the target population was needed based on a power of 0.80 ($\beta = 0.80$), a significance level of 0.05 ($\alpha = 0.05$), and an effect size of 0.15 ($\rho = 0.15$), which is summarized in Appendix E. Data collection included two sources of data in this quantitative correlational study. Both sources of data have been previously used to measure Psychological Capital and Academic Burnout in other empirical studies. For example, Rad et al. (2017) utilized the Psychological Capital Questionnaire (PCQ-24) to measure Psychological Capital. Schaufeli et al. (2002) utilized the Maslach Burnout Inventory-Student Survey (MBI-SS) to measure Academic Burnout. The researcher selected the PCQ-24 for this study as it is a valid and reliable instrument to measure Psychological Capital (Luthans, Youssef, & Avolio, 2007). The MBI-SS was selected for this study because it is a valid and reliable instrument for the measurement of Academic Burnout (Schaufeli et al., 2002; Shi, Gugiu, Crowe, & Way, 2019; Yavuz & Dogan, 2014). In summary, this study utilized previously validated and

reliable instruments to collect data relative to the variables of PsyCap and Academic Burnout in a sample of at least 85 active students enrolled in post-graduate studies within the College of Health Sciences at a university in the Southeastern United States.

For this study, Likert scale ratings associated with the MBI-SS and the PCQ-24 were treated as continuous data to meet assumptions of multiple linear regression analysis. The use of Likert scale items as continuous data have been previously established and accepted in literature related to the Maslach Burnout Inventory-Student Survey (MBI-SS) and the PCQ-24 (Bernstein & Volpe, 2016; Bikar et al., 2018; Ding et al., 2015; Kristanto et al., 2016; Rad et al., 2017; Wang et al., 2017). A total of 96 participants from the target population completed the PCQ-24 and the MBI-SS as part of a survey on Google Forms. Additional information, such as age, gender, marital status, program and level of experience (time enrolled in a post-graduate program), was obtained from the survey on Google Forms with participant permission to establish a demographic profile of the sample participants.

Definition of Terms

Academic Burnout. Academic Burnout is a state of depleted energy, exhaustion and feelings of low personal accomplishment in response to the psychological and emotional demands placed on the individual by the academic environment (Neumann, 1990). Three essential constructs typically characterize Academic Burnout, including Exhaustion, Cynicism, and Competence (Schaufeli et al., 2002).

Competence. Competence refers to an individual's perception of reduced personal accomplishment, efficacy, and productivity in response to feeling emotionally exhausted and cynical (Schaufeli et al., 2002).

Cynicism. Cynicism is a negative and detached response to interpersonal interaction and communication with other individuals in the environment in response to feeling emotionally exhausted (Breso et al., 2007).

Efficacy. The perceived belief that one's capabilities directly lead to the successful planning and completion of a specific course of action (Bandura, 1997, p. 3).

Exhaustion. Exhaustion is a state of emotional fatigue that an individual typically experiences in response to excessive psychological and emotional stressors (Breso et al., 2007).

Hope. Hope is a positive motivational state that intentional goal-directed energy (agency) and its associated pathways will lead to accomplishing established goals (Snyder et al., 1991, p. 287).

Maslach Burnout Inventory-Student Survey (MBI-SS). The MBI-SS was found to be a valid and reliable instrument in the measurement of Academic Burnout (Schaufeli et al., 2002; Shi et al., 2019; Yavuz & Dogan, 2014). The MBI-SS consists of 16 items, of which five questions are specific to the Exhaustion category, five questions are specific to the Cynicism category, and 6 questions are specific to the Competence category (Schaufeli et al., 2002).

Optimism. Optimism is a belief acknowledging that positive outcomes and events are realistic based on evaluations of internal and external attributions (Seligman, 1998; Seligman & Csikszentmihalyi, 2000).

Psychological Capital (PsyCap).

PsyCap is an individual's positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the

> necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success (Luthans, Youssef, & Avolio, 2007, p. 3).

Psychological Capital Questionnaire (PCQ-24). The PCQ-24 is a 24-item questionnaire that has been found to be a valid and reliable instrument in the measurement of PsyCap (Luthans, Avey, Avolio, & Peterson, 2010; Luthans, Avolio, Avey, & Norman, 2007). The PCQ-24 incorporates six questions related to each of the sub-group categories of PsyCap, including Hope, Efficacy, Resilience, and Optimism (Luthans et al., 2010; Luthans, Avolio, Avey, & Norman, 2007).

Resilience. Resilience is a series of personal assets or resources that predict positive adaptation and success in the face of significant adversity (Masten, 2001).

Assumptions, Limitations, Delimitations

The following section of Chapter 1 identifies the assumptions and specifies the limitations, as well as the delimitations, of the study.

Assumptions. Assumptions are what the researcher takes for granted and accepts as true without concrete proof (Ellis & Levy, 2009). The following assumptions are present in this study:

1. The assumption is that participants of the study answered survey questions honestly and to the best of their ability.
2. The assumption is that the PCQ-24 accurately measured Psychological Capital. The rationale is that the administration of the instrument occurred as outlined in the instruction manual. Further, the PCQ-24 has been proven to be a valid and reliable instrument in the measurement of Psychological Capital (Luthans et al., 2010; Luthans, Avolio, Avey, & Norman, 2007).

3. The assumption is that the Maslach Burnout Inventory-Student Survey (MBI-SS) accurately measured Academic Burnout. The rationale is that the administration of the instrument occurred as outlined in the instruction manual. Further, the Maslach Burnout Inventory-Student Survey (MBI-SS) has been proven to be a valid and reliable instrument in the measurement of Academic Burnout (Schaufeli et al., 2002; Shi et al., 2019; Yavuz & Dogan, 2014).

Limitations and delimitations. Limitations are potential weaknesses, problems, or biases within the research study that the researcher self-identifies (Ellis & Levy, 2009). The following limitations are present in this study:

1. The findings may not generalize to all post-graduate, undergraduate, or secondary school students as the target population involved post-graduate health science students at a university in the Southeastern region of the United States.

2. The findings may not generalize to other geographical regions of the United States as the target population involved post-graduate health science students at a university in the Southeastern region of the United States.

3. The use of a correlational design did not allow the researcher to establish cause and effect conclusions from the results of the study (Portney & Watkins, 2009).

4. The use of multiple linear regression analysis did not allow the researcher to draw conclusions related to cause and effect (Lund Research Ltd., 2018).

5. The use of convenience sampling reduced the representativeness of the population, thereby decreasing the generalizability of the results (Fraenkel et al., 2015).

Delimitations refer to objectives that the researcher did not intend to pursue to establish boundaries for the research study (Ellis & Levy, 2009). The following delimitations are present in this study:

1. The target population involved only post-graduate students, excluding those students pursuing undergraduate education.

2. Longitudinal study design may yield different or similar results. However, this study was delimited to a cross-sectional design in the 2018-2019 academic year.

3. The target population involved students from the College of Health Sciences, excluding those students pursuing post-graduate education in other disciplines, such as business or social sciences.

4. The target population involved post-graduate students from a university in the Southeastern region of the United States, excluding those students pursuing post-graduate education from Universities in other regions of the United States.

Summary and Organization of the Remainder of the Study

This chapter introduced the topic of study, which involved an examination of the potential predictive relationship of the Hope, Efficacy, Resilience, and Optimism constructs of PsyCap and Academic Burnout in American post-graduate health science students. Specifically, previous research has identified that PsyCap is a factor associated with reduced occupational stress (Rabenu & Yaniv, 2017; Wang et al., 2017), improved worker engagement and well-being (Adil & Kamal, 2016), reduced burnout syndrome in the workplace (Wang et al., 2017; Yim et al., 2017), and reduced Academic Burnout in medical students in Iran (Rad et al., 2017). Rad et al. (2017) conducted a quantitative correlational study to investigate the predictive relationship between Psychological Capital and Academic Burnout in a sample of 172 medical students from a university located in Iran. The authors found a significant negative predictive correlation between Academic Burnout and Psychological Capital (Rad et al., 2017). Rad et al. noted that a substantial limitation to the study involved a sample of participants from a single university in Iran that reduced the generalizability of the findings. Rad et al. suggested future researchers should investigate the relationship between Psychological Capital and Academic Burnout in other countries. This recommendation served as the foundational premise for this study.

Therefore, the purpose of this quantitative, correlational study using multiple linear regression was to examine if, or to what extent, the composite and sub-categorical levels of Psychological Capital predict Academic Burnout in post-graduate health science students in the Southeastern United States. The findings of this study provide practical

value by extending the understanding of the potential predictive relationship between PsyCap and Academic Burnout to American post-graduate health science students. Gaining a deeper understanding of the predictive relationship between PsyCap and its constructs and Academic Burnout may influence higher education leaders and administrators with regards to policymaking and student advisement practices that reduce the likelihood of students experiencing Academic Burnout. This study further deepens the knowledge base of the theoretical underpinning of Psychological Capital by examining the predictive relationship between Academic Burnout and each of the sub-variable constructs that characterize PsyCap, which include Hope, Efficacy, Resilience, and Optimism (Luthans, Youssef, & Avolio, 2007). Additionally, this study adds value to students attending post-graduate programs in the United States by determining whether a predictive relationship exists between the constructs of PsyCap and Academic Burnout in an environment that directly relates to these students. Finally, this study may promote future research that examines whether interventions associated with PsyCap development could protect students from experiencing Academic Burnout.

Chapter 2 will provide a literature review related to the background of the problem, the theoretical foundation of the study, common thematic elements identified in the literature, and a summary of the methodology and instrumentation utilized in the study. Chapter 3 will present a comprehensive depiction of the methodology of the research study, as well as present the research questions and associated hypotheses of the study. Additionally, Chapter 3 will present the selected research design, target population, sample size, instrumentation, and data collection and data analysis processes. Finally, Chapter 4 will provide data summary and statistical analysis sections, and

Chapter 5 will present a summary of the study, findings, implications, and future recommendations sections. The researcher expected full completion of the entire dissertation project by the end of September 2019.

Chapter 2: Literature Review

Introduction to the Chapter and Background to the Problem

The purpose of this quantitative, correlational study using multiple linear regression was to examine if, or to what extent, the composite and sub-categorical levels of Psychological Capital predict Academic Burnout in post-graduate health science students in the Southeastern United States. The Psychological Capital Questionnaire (PCQ-24) was implemented to measure the variable PsyCap, including the sub-composite categories of Hope, Efficacy, Resilience, and Optimism. The Maslach Burnout Inventory-Student Survey (MBI-SS) was implemented to measure the variable Academic Burnout. Previous research has investigated the benefits of PsyCap related to the academic environment and the potential for developing burnout syndrome in higher education. Thus, the purpose of this literature review is to provide a comprehensive overview of the literature related to the study of the relationship between PsyCap and Academic Burnout.

Multiple resources and academic databases were utilized to conduct a comprehensive review of relevant literature to the study, such as EBSCOhost, Google Scholar, ERIC, and ProQuest Dissertations and Theses. Search keywords for the study included Burnout, burnout syndrome, Academic Burnout, Psychological Capital, Hope, Efficacy, self-efficacy, Resilience, Optimism, Psychological Capital Questionnaire (PCQ-24), Maslach Burnout Inventory-Student Survey (MBI-SS), higher education, post-secondary education, college, university, graduate students, and post-graduate students. This literature review will also discuss the Background to the Problem, provide a historical overview of the study, and present the theoretical framework of the study. Finally, this chapter will present the Review of the Literature, which will highlight key

thematic topics found in the comprehensive literature review, such as: (a) overview of Academic Burnout, (b) overview of Psychological Capital (PsyCap), (c) literature related to sub-variable: "Hope", (d) literature related to sub-variable: "Efficacy", (e) literature related to sub-variable: "Resilience", (f) literature related to sub-variable: "Optimism", (g) relationship between burnout and health professions, (h) relationship between burnout and success outcomes, (i) relationship between PsyCap and success outcomes, (j) relationship between burnout and leadership, (k) relationship between PsyCap and leadership, (l) relationship between PsyCap and Academic Burnout, and (m) methodology and instrumentation. Finally, the summary will introduce Chapter 3, which will focus on an extensive presentation of the methodology, design, associated research questions, instrumentation, and the population of the study.

Regarding the background of the problem, burnout syndrome is an important condition to study because of its prevalence. Burnout syndrome is a common occurrence in individuals working in healthcare professions. For example, over 40% of healthcare professionals in front-line medical settings (family medicine, emergency medicine, critical care medicine, and general internal medicine) experience burnout syndrome (Mealer et al., 2016). Similarly, Lebares et al. (2018) conducted a quantitative correlational study of 566 surgical residents examining the prevalence of burnout syndrome and associated psychological characteristics that contribute to burnout syndrome in physicians. Lebares et al. (2018) found that 69% of participants surveyed experienced burnout syndrome. Additionally, Adriaenssens et al. (2015) conducted a systematic review of 17 empirical quantitative studies on burnout in emergency nurses between 1989 and 2014 and found that on average, 26% of emergency nurses experience

burnout syndrome. Thus, burnout syndrome is a widespread condition impacting the healthcare workplace setting.

The types of setting in which individuals may be at risk of experiencing burnout syndrome have evolved. Initially, burnout syndrome was argued to be specific to employees in the human services domain (health care, education, and social work, among others) in which employees perform some aspect of people work (Maslach & Jackson, 1981). However, burnout syndrome is associated with populations outside of the human services domain. Lastovkova et al. (2017) conducted an exploratory study of burnout syndrome across nine European countries (Denmark, Estonia, France, Hungary, Latvia, Netherlands, Portugal, Slovakia and Sweden) that acknowledge burnout syndrome as an occupational disease. In the study, health professions and education were the two most commonly reported occupations with individuals experiencing burnout syndrome across the nine European countries (Lastovkova et al., 2017). However, professions such as judges, bookkeepers, businesspeople, directors or managers, pharmaceutical assistants, and firefighters were also found to experience burnout syndrome (Lastovkova et al., 2017). Similarly, Smith, Hughes, DeJoy, and Dyal (2018) found that burnout syndrome was prevalent in a sample of 208 firefighters from the southeastern United States, which increased when the firefighter experienced work stress and work-family conflict. Finally, Guo et al. (2015) conducted a quantitative correlational study with a sample of 1,300 iron and steel workers in China and found significantly high levels of burnout syndrome among participants. Thus, burnout syndrome has a widespread societal impact across many disciplines and workplace settings.

However, burnout syndrome may also be a risk for individuals outside of the workplace environment. The common term for burnout syndrome in a student population is Academic Burnout (Breso et al., 2007; Neumann, 1990). Academic Burnout is common in student populations at many different grade levels (Balogun et al., 1995; Balogun et al., 1996; Bikar et al., 2018; Breso et al., 2007; Gold & Michael, 1985; Schaufeli et al., 2002; Neumann, 1990; Salmela-Aro et al., 2008; Rad et al., 2015; Rad et al., 2017; Williams, Dziurawiec, & Heritage, 2017). Thus, students in an academic environment may be at risk of experiencing Academic Burnout.

For example, Academic Burnout is prevalent among university health science students. Santen et al. (2010) conducted a quantitative correlational study examining the prevalence of Academic Burnout in a sample of 249 medical students. Santen et al. (2010) found that 21% of first-year students, over 40% of second- and third-year students, and 31% of fourth-year students experienced a moderate or high degree of Academic Burnout in medical school. In addition to significant prevalence, Academic Burnout has been found to have negative consequences. These consequences include decreased student engagement (Schaufeli et al., 2002), lower academic performance, reduced student motivation, and incivility in the classroom (Rad et al., 2015). Further, Academic Burnout typically causes a state of exhaustion associated with the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008). It is, therefore, of vital significance to conduct research that examines constructs that may reduce the potential for students to experience the negative consequences of Academic Burnout.

Several factors reduce the risk of students experiencing Academic Burnout. Salmela-Aro et al. (2008) found that when students perceived their teachers as positive and motivational, the risk of students experiencing Academic Burnout lessened (Salmela-Aro et al., 2008). Positive affect, or the extent to which a person has an enjoyable, alert, and engaged type of personality, decreased an individual's risk of Academic Burnout (Bikar et al., 2018). Additionally, Resilience is a trait that has been correlated with a decreased risk of developing Academic Burnout (Ying et al., 2016). Thus, a negative correlation exists between Academic Burnout and constructs associated with positive psychology and Resilience.

A significant paradigm characterized by positive psychology and Resilience is Psychological Capital (PsyCap). An association between PsyCap and Academic Burnout has been established (Rad et al., 2017). Rad et al. (2017) conducted a quantitative correlational study to investigate the relationship between Psychological Capital and Academic Burnout. The sample included 172 medical students from an Iranian university who completed two self-report questionnaires, one to measure Psychological Capital and one to measure Academic Burnout (Rad et al., 2017). A significant negative correlation between Academic Burnout and Psychological Capital was found, including two sub-variable components (Exhaustion = -0.762; Cynicism = -0.740) (Rad et al., 2017). The third sub-variable (Inefficacy) was found to have a positive relationship with PsyCap (Inefficacy = 0.190) (Rad et al., 2017). Rad et al. (2017) noted that a significant limitation to the study involved a sample of participants from a single university in Iran that reduced the generalizability of the findings. Thus, the association between Psychological Capital and Academic Burnout in a student population outside of the country of Iran is

warranted for further study (Rad et al., 2017). Therefore, this study aimed to examine if, or to what extent, the composite and sub-composite categories of Psychological Capital predict Academic Burnout in American post-graduate health science students at a university in the Southeastern United States.

Identification of the Gap

The relationship between PsyCap and Academic Burnout has been previously investigated in medical field post-graduate education. Rad et al. (2017) conducted a quantitative correlational study to examine the relationship between Psychological Capital and Academic Burnout. The authors sampled 172 medical students from a university located in Iran (Rad et al., 2017). Study participants completed two self-report questionnaires, one to measure Psychological Capital and one to measure Academic Burnout (Rad et al., 2017). Rad et al. (2017) conducted both Pearson's correlation coefficient analysis and multiple regression analysis in the study. The authors found a significant negative correlation between Academic Burnout and Psychological Capital (Rad et al., 2017). These findings may indicate that as an individual's capacity for PsyCap increases, the risk of the individual experiencing Academic Burnout may decrease.

Additional findings of the study indicated an association between the sub-categorical constructs of Academic Burnout and PsyCap. Rad et al. (2017) identified a significant negative association with two sub-variable components (Exhaustion = -0.762; Cynicism = -0.740). The third sub-variable (Inefficacy) was found to have a positive relationship with PsyCap (Inefficacy = 0.190) (Rad et al., 2017). Rad et al. noted that a significant limitation to the study involved a sample of participants from a single university in Iran that reduced the generalizability of the findings. Future research is

recommended to investigate the relationship between Psychological Capital and Academic Burnout in other countries (Rad et al., 2017). Therefore, a gap in the literature exists as to whether the composite and sub-composite categories of Psychological Capital predict Academic Burnout in the United States.

Additional studies further contribute to the gap in the literature pertaining to PsyCap and burnout. For example, literature has established a negative relationship between academic self-efficacy, which is a component of psychological capital, and academic burnout. Yu, Chae, and Chang (2016) conducted a quantitative correlational study with multiple regression analysis to examine the relationships among academic self-efficacy, socially-prescribed perfectionism, and academic burnout in Korean medical school students. Based on the results of the study, academic self-efficacy has a negative association with academic burnout and serves a mediating role in the relationship between perfectionism and academic burnout in Korean medical school students (Yu et al., 2016). The authors noted that a limitation to the study involved a sample of medical students from a single educational institution in Korea (Yu et al., 2016). The authors recommended designing a study that would encompass a more diverse range of individual and external variables that might affect academic burnout to establish structural relationships (Yu et al., 2016).

Literature has also established a negative relationship between resilience, which is a component of psychological capital, and academic burnout. García-Izquierdo, Ríos-Risquez, Carrillo-García, and de los Ángeles Sabuco-Tebar (2018) conducted a quantitative correlational study to examine the relationships among resilience, academic burnout, and psychological health in a sample of 218 nursing students at the University of

Murcia in Spain. The authors found a significant negative relationship between resilience and academic burnout, and between resilience and psychological health (García-Izquierdo et al., 2018). Further, the authors discovered that resilience serves as a moderator in the negative relationship between academic burnout and psychological health in sampled nursing students at the University of Murcia (García-Izquierdo et al., 2018). Thus, the authors concluded that students with lower levels of resilience are more likely to experience burnout and report worse perceived psychological health (García-Izquierdo et al., 2018). The authors recommended future research to better clarify the role of resilience as a psychological capacity in the development of burnout syndrome and psychological symptoms (García-Izquierdo et al., 2018). In other words, future research is warranted to investigate the relationships among resilience (a component of psychological capital), burnout, and psychological health in university students.

Finally, literature has established a relationship between occupational burnout and psychological capital. For example, Rehman, Qingren, Latif, and Iqbal (2017) conducted a quantitative correlational study with linear regression analysis to determine the interrelation between positive psychological capital, occupational burnout, and job performance. The authors sampled 282 faculty members from 17 technical institutions from the province of Punjab, Pakistan (Rehman et al., 2017). One significant finding in the study was that psychological capital serves as a mediator in the relationship between occupational burnout and job performance (Rehman et al., 2017). Thus, the authors concluded that psychological capital may significantly reduce the negative impact of occupational burnout on performance outcomes of faculty members in Pakistan (Rehman et al., 2017). One limitation of the study noted by the authors is that the sample involved

faculty members from technical and professional institutions under Pakistan government control (Rehman et al., 2017). The authors recommended future research involving private technical institutions and other sectors of education (Rehman et al., 2017). Taking into consideration the collective recommendations by García-Izquierdo et al. (2018), Rehman et al. (2017), and Yu et al. (2016), further study regarding the relationship between PsyCap and Academic Burnout is warranted.

Therefore, this study directly addressed the gap and contributed to the existing literature by extending the understanding of the potential predictive relationship of PsyCap with Academic Burnout in American post-graduate health science students. This study further deepens the knowledge base of the theoretical underpinning of Psychological Capital by examining the relationship between Academic Burnout and each of the sub-variable constructs that characterize PsyCap, which include Hope, Efficacy, Resilience, and Optimism (Luthans, Youssef, & Avolio, 2007). Finally, this study adds value to students attending post-graduate programs in the United States by determining whether a predictive relationship exists between PsyCap and Academic Burnout in an environment that directly relates to these students.

This study also contributes to the existing literature related to the theoretical underpinning of Academic Burnout, including the main constructs of Exhaustion, Cynicism, and Competence (Schaufeli et al., 2002). Academic Burnout is associated with adverse consequences, such as decreased student engagement (Schaufeli et al., 2002), lower academic performance, reduced student motivation and incivility in the classroom (Rad et al., 2015). Examination of the predictive relationship between PsyCap and Academic Burnout deepens the knowledge base of literature related to Academic

Burnout. Additionally, the results may influence higher education leaders and administrators in policymaking designed to reduce the potential for students to experience Academic Burnout.

Researching whether a predictive relationship exists between PsyCap and Academic Burnout may have practical implications for post-graduate faculty and administrators with regards to student advising and mentorship practices targeted at preventing the negative consequences of Academic Burnout among students. For example, Ding et al. (2015) found that PsyCap, including all four subcomponents, were negatively correlated with burnout among Chinese nurses. This finding indicates that nursing professionals low in PsyCap may be more at risk of developing burnout syndrome (Ding et al., 2015). Laschinger and Grau (2012) found similar findings on the relationship between PsyCap and burnout among new graduate nurses in Canada. The results of a negative correlation between PsyCap and burnout prompted both Ding et al. (2015) and Laschinger and Grau (2012) to recommend future research that examines whether interventions to develop PsyCap resources may effectively protect nursing professionals from the negative consequences of burnout syndrome. Thus, the findings of this study were needed to potentially promote future research that examines whether interventions pertaining to PsyCap development could protect students from experiencing Academic Burnout.

Theoretical Foundations and/or Conceptual Framework

Psychological Capital (PsyCap) has a theoretical foundation grounded in Positive Psychology Theory. Hope, Efficacy, Resilience, and Optimism are constructs that characterize PsyCap (Luthans, Youssef, & Avolio, 2007, p. 3). Luthans et al. (2010)

proposed a state-trait continuum to define these four constructs associated with Psychological Capital. The authors described pure states as changeable momentary moods or feelings, and pure traits as relatively unchangeable and fixed characteristics (Luthans et al., 2010). Further, two other components are proposed to be included in the continuum between states and traits, which the authors labeled as state-like and trait-like (Luthans et al., 2010). A state-like criterion is described as an individual characteristic that is open to development, change, or adaptation while a trait-like criterion is viewed as a fixed construct that is relatively difficult to develop, change, or adapt (Luthans et al., 2010). Luthans et al. (2010) contend that the criterion associated with PsyCap are state-like characteristics, capable of development, change, or adaptation. Thus, Psychological Capital can be considered a positive psychology conceptual framework with four state-like criteria, each of which provides a specific value to the theoretical foundation.

The first state-like criterion characterizing PsyCap is Hope. Snyder (1994) defined the Hope resource as empowered thinking. Hope is argued to contain two major components that lead individuals toward goal-oriented behavior and accomplishments (Luthans et al., 2010; Snyder, 1994). The first is agency, which involves the willpower and capacity of motivation to start, pursue, and accomplish a given goal (Luthans et al., 2010; Snyder, 1994). Individuals will often employ positive self-talk when establishing agency (Luthans et al., 2010; Snyder, 1994). The second component is pathways, which involve the generation of routes necessary to accomplish a given goal (Luthans et al., 2010; Snyder, 1994). Pathways often require frequent modification, adaptation, or development of alternative paths in the presence of obstacles (Luthans et al., 2010;

Snyder, 1994). Thus, the Hope resource involves the capacity for problem-solving and planning needed for an individual to succeed.

The second state-like criterion characterizing PsyCap is Efficacy. The Efficacy criterion, often referred to as self-efficacy, was developed by Bandura (1997) as part of the Social Cognitive Theory (Luthans et al., 2010). Self-efficacy involves an individual's perceptual belief in their knowledge, ability, and skill to complete a given task within a specific environmental context (Bandura, 1997; Luthans et al., 2010). Bandura (1997) argued that self-efficacy is a construct that can be developed through mastery over challenging tasks, learning through modeling, feedback, and emotional well-being and support (Bandura, 1997; Luthans et al., 2010). Therefore, the Efficacy resource refers to an individual's inherent belief in their capacity to be successful.

The third state-like criterion of PsyCap is Resilience. Resilience typically involves a series of personal assets or resources that predict positive adaptation and success despite the presence of challenges or adversity (Masten, 2001). Resiliency theory is the theoretical foundation related to the Resilience resource. Resiliency theory derives from a concept of biopsychospiritual homeostasis, which contends that individuals actively work to achieve balance with physical, psychological, and spiritual considerations (Connor & Davidson, 2003; Richardson, 2002; Richardson, Neiger, Jensen, & Kumpfer, 1990). Resiliency theory argues that internal and external stressors are continuously present, challenging, and eventually disrupting one's biopsychospiritual homeostasis (Connor & Davidson, 2003; Richardson, 2002; Richardson et al., 1990). In response to a disruption in homeostasis, individuals will engage in reintegration processes that lead to four alternative outcomes: 1) resiliency reintegration (return to higher level of

homeostasis), 2) reintegration back to homeostasis (return to baseline status), 3) reintegration with loss (achievement of a lower level of homeostasis), and 4) reintegration dysfunction (resorting to mal-adaptive and self-destructive behaviors) (Connor & Davidson, 2003; Richardson, 2002; Richardson et al., 1990). Therefore, the Resilience resource refers to an individual's ability to overcome barriers to achieve success.

The final state-like criterion of PsyCap is Optimism. Optimism is a general cognitive state of acknowledgment that positive events occur through internal, stable, and global causes, while adverse events arise through external, unstable, and specific reasons (Luthans et al., 2010; Seligman, 1998; Seligman & Csikszentmihalyi, 2000). Optimism is grounded in positive psychology theory, which is characterized by the expectation that, in general, good outcomes will result from an increased effort, even in the presence of adversity (Luthans et al., 2010; Seligman, 1998; Seligman & Csikszentmihalyi, 2000). Optimism differs from self-efficacy in that self-efficacy is the belief in accomplishing a task based on one's skill, while Optimism is the general expectation of positive outcomes that are less connected to one's abilities (Luthans et al., 2010). Therefore, the Optimism resource refers to an individual's perception that their outcome will likely be a positive success.

The other major theoretical foundation in this study involves burnout syndrome. Maslach and Jackson (1981) contend that burnout syndrome has a three-dimensional construct model, which includes Emotional Exhaustion, Depersonalization, and reduced Personal Accomplishment categories. Evolving from the seminal work regarding burnout syndrome by Maslach and Jackson (1981), burnout specific to students has been

classified as Academic Burnout (Bikar et al., 2018; Neumann, 1990; Salmela-Aro et al., 2008). Academic Burnout involves a state of depleted energy, exhaustion, and feelings of low personal accomplishment in response to the psychological and emotional demands placed on the individual by the academic environment (Neumann, 1990). According to Schaufeli et al. (2002), Exhaustion, Cynicism, and Competence are the three categories that characterize Academic Burnout among students. Thus, exhaustion associated with study demands, cynicism and a detached attitude related to exhaustion, and reduced efficacy and feelings of incompetence associated with exhaustion and cynicism characterize Academic Burnout (Schaufeli et al., 2002; Shi et al., 2019; Yavuz & Dogan, 2014).

Review of the Literature

Overview of Academic Burnout. Academic Burnout essentially involves burnout syndrome in an individual associated with the educational environment. Three classic signs and symptoms characterize burnout syndrome, including Exhaustion, Depersonalization, and reduced Personal Accomplishment (Maslach & Jackson, 1981). Initially, burnout syndrome was argued to be specific to employees in the human services domain (health care, education, and social work, among others) in which employees perform some aspect of people work (Maslach & Jackson, 1981). For example, burnout syndrome is a common occurrence in individuals that work in health professions (Arrogante & Aparicio-Zaldivar, 2017; Back et al., 2016; Kutluturkan et al., 2016; Lebares et al., 2018; Panagioti, Geraghty, & Johnson, 2018), with over 40% of healthcare professionals in front-line medical settings (family medicine, emergency medicine,

critical care medicine and general internal medicine) reporting to have experienced burnout syndrome (Mealer et al., 2016).

However, burnout syndrome is also commonly associated with populations outside of human services occupations, such as the student population (Balogun et al., 1995; Balogun et al., 1996; Bikar et al., 2018; Breso et al., 2007; Gold & Michael, 1985; Schaufeli et al., 2002; Neumann, 1990; Salmela-Aro et al., 2008; Rad et al., 2015; Rad et al., 2017; Williams et al., 2017). Burnout specific to students is termed Academic Burnout (Bikar et al., 2018; Neumann, 1990; Salmela-Aro et al., 2008). Exhaustion, Cynicism, and Competence categories are the main characteristics of Academic Burnout (Schaufeli et al., 2002). Researchers have studied the effects of burnout in the academic setting (An, Yuan, Liu, Zhou, & Xu, 2018; Chang, Lee, Byeon, Seong, & Lee, 2016; Kim, Kim, & Lee, 2017; Lee & Lee, 2018; Lee, Choi, & Chae, 2017; Leupold, Lopina, & Erickson, 2019; Noh, Chang, Jang, Lee, & Lee, 2016; Wang, Guan, Li, Xing, & Rui, 2019; Xu et al., 2017; Zhou, Zhen, & Wu, 2017). Academic Burnout is commonly related to a state of fatigue associated with the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008). Academic Burnout is correlated with behavioral incivility in the classroom, low levels of motivation, and poor academic performance (Rad et al., 2015; Rad et al., 2017). Therefore, students experiencing Academic Burnout may suffer negative consequences in the educational environment.

There are several risk factors associated with students experiencing Academic Burnout. Academic Burnout has a higher incidence rate when students have a negative perception of school climate and support, have a lower GPA, or are female (Salmela-Aro

et al., 2008). Negative affect, or the extent to which a person has a generally dissatisfied and unpleasant type of personality, increased an individual's risk of Academic Burnout (Bikar et al., 2018). Finally, Academic Burnout has been found to correlate with an imbalance between the demand placed on students and the rewards obtained for exerting those demands (Kim et al., 2017; Williams et al., 2017). Thus, students with a lower GPA who perceive less support and an imbalance in work effort versus reward are more likely to experience Academic Burnout.

Academic Burnout may occur in students at many levels of schooling. This includes elementary school (Khalaj & Savoji, 2018; Salmela-Aro et al., 2008), middle school (An et al., 2018; Cadime et al., 2016; Kim, Lee, Kim, Choi, & Lee, 2015; Lee & Lee, 2018; Noh et al., 2016; Salmela-Aro et al., 2008; Xu et al., 2017), high school (Ates, 2016; Bikar et al., 2018), undergraduate university level (Chang et al., 2016; Leupold et al., 2019; Onuoha & Akintola, 2016; Onuoha & Idemudia, 2017; Schaufeli et al., 2002; Wang et al., 2019; Zaregar, Ebrahimipour, Shaabani, & Hooshmand, 2017), and post-graduate university level (Lee et al., 2017; Rad et al., 2017; Shetty, Shetty, Hegde, Narasimhan, & Shetty, 2015). For example, Salmela-Aro et al. (2008) conducted a quantitative correlational study that examined if differences exist between schools and students exhibiting Academic Burnout. Salmela-Aro et al. (2008) sampled 58,657 students from 431 comprehensive schools and 29,515 students from 228 upper secondary schools in Finland. Participants completed a questionnaire involving burnout, school-related variables (i.e., adverse school climate, positive motivation received from teachers, support from the school), and individual variables (i.e., gender, grade-point average, socioeconomic status, and family structure) (Salmela-Aro et al., 2008). Thus, the study

implemented a considerable sample size and explored many individual and school-related variables to determine who might be more at risk of experiencing Academic Burnout.

The study uncovered exciting findings specific to individual and school-related variables. Correlation results revealed minimal variance existed between schools (comprehensive versus upper secondary schools) regarding students experiencing burnout syndrome, indicating that Academic Burnout in students is not related to the type of school students attend (Salmela-Aro et al., 2008). Additionally, correlation analysis showed that the more students viewed the climate at the school as negative and felt they received less support from the school, the more these students experienced burnout syndrome (Salmela-Aro et al., 2008). Salmela-Aro et al. (2008) found that GPA and gender differences exist in students experiencing burnout syndrome. Higher achieving students academically experienced less Academic Burnout, and female students experience burnout syndrome more than male (Salmela-Aro et al., 2008). Finally, the more students viewed their teachers as positive and motivational, the less the participants experienced Academic Burnout (Salmela-Aro et al., 2008). While these findings are significant, the sample of Finnish adolescent students results in reduced generalizability to students in other countries and stages of education, such as post-graduate university students.

There is further support in the literature regarding individual factors associated with students experiencing Academic Burnout. Schaufeli et al. (2002) conducted a cross-national study of 1,661 undergraduate university students in Spain, Portugal, and the Netherlands, utilizing a self-report questionnaire related to burnout, engagement, and academic performance. Schaufeli et al. (2002) implemented a confirmatory factor

analysis of the MBI-SS, a modified version of the Maslach Burnout Inventory-General Survey, and found that the three-factor structure (Exhaustion, Cynicism, and Competence) was valid. Additionally, Academic Burnout was found to be significantly and negatively correlated with academic performance and modestly and negatively associated with engagement (Schaufeli et al., 2002). Limitations of the study include sampling in undergraduate students of European countries that may not directly apply to students in other countries and at different stages of education, such as post-graduate university students.

Additionally, the relationship between harmonious passion and burnout has been examined in the literature. Individuals exhibiting harmonious passion demonstrate a strong inclination to participate in an activity that is internalized and based on freedom of choice (Saville, Bureau, Eckenrode, & Maley, 2018). Conversely, individuals exhibiting obsessive passion demonstrate participation in an activity that is driven by external pressures as opposed to freedom of choice (Saville et al., 2018). Literature has established a negative correlation between harmonious passion and burnout syndrome (Birkeland, Richardsen, & Dysvik, 2018; Demirci & Çepikkurt, 2018; Saville et al., 2018). For example, Saville et al. (2018) examined the relationship between harmonious passion and burnout in a sample of 312 undergraduate students from a university in the Southeastern United States. The authors discovered that harmonious passion was significantly and negatively correlated with burnout syndrome (Saville et al., 2018). Additionally, students with harmonious passion were less likely to experience Academic Burnout when compared to non-passionate students or students exhibiting obsessive

passion (Saville et al., 2018). Thus, Academic Burnout may be lessened in students that demonstrate harmonious passion for their academic work.

In summary, Academic Burnout involves burnout syndrome in the education environment. Exhaustion, Cynicism, and Competence constructs outline Academic Burnout (Schaufeli et al., 2002). Academic Burnout may occur in students at any age or level of schooling (An et al., 2018; Ates, 2016; Bikar et al., 2018; Chang et al., 2016; Khalaj & Savoji, 2018; Kim et al., 2015; Lee et al., 2017; Lee & Lee, 2018; Leupold et al., 2019; Noh et al., 2016; Onuoha & Akintola, 2016; Onuoha & Idemudia, 2017; Rad et al., 2017; Salmela-Aro et al., 2008; Schaufeli et al., 2002; Wang et al., 2019; Xu et al., 2017; Zaregar et al., 2017). Academic Burnout is correlated with behavioral incivility in the classroom, low levels of motivation, and poor academic performance (Rad et al., 2015; Rad et al., 2017). Risk factors associated with Academic Burnout include lower GPA, female gender, negative affect, negative perception of school climate and support, and imbalance of rewards relative to the exerted effort (Bikar et al., 2018; Salmela-Aro et al., 2008; Williams et al., 2017). Finally, individuals exhibiting harmonious passion are less likely to experience burnout (Birkeland et al., 2018; Demirci & Çepikkurt, 2018; Saville et al., 2018). However, a lack of literature involves sampling populations that include post-graduate students.

Overview of Psychological Capital (PsyCap). PsyCap is a positive psychological model of growth and development. Hope, Efficacy, Resilience, and Optimism constructs are the primary characteristics of PsyCap (Luthans, Youssef, & Avolio, 2007, p. 3). Researchers have examined a wide range of factors associated with PsyCap (Brunetto et al., 2016; Burns, Posey, Roberts, & Lowry, 2017; Howard, 2017;

Hur, Rhee, & Ahn, 2016; Karatepe & Talebzadeh, 2016; Liao & Liu, 2016; Madrid, Diaz, Leka, Leiva, & Barros, 2018; Newman, Nielsen, Smyth, Hirst, & Kennedy, 2018; Pu, Hou, Ma, & Sang, 2017; Singhal & Rastogi, 2018; Tüzün, Çetin, & Basim, 2018; Xu, Liu, & Chung, 2017). Previous literature related to Psychological Capital has identified a strong negative correlation between PsyCap and stress (Baron, Franklin, & Hmieleski, 2016; Kaur & Amin, 2017; Kaur & Kaur Sandhu, 2016; Rabenu & Yaniv, 2017; Wang et al., 2017; Zhou et al., 2017). Specific to the academic setting, Kaur and Kaur Sandhu (2016) conducted a quantitative correlational study on the relationship between PsyCap and stress in 200 post-graduate students from Punjabi University, Patiala. Of those sampled, 80 students were male, and 120 students were female (Kaur & Kaur Sandhu, 2016). The sample also consisted of a relatively equal distribution of art majors, science majors, and professional studies majors (Kaur & Kaur Sandhu, 2016). PsyCap was measured through the Psychological Capital Questionnaire, while the Personal Stress Source Inventory (PSSI) was used to measure stress (Kaur & Kaur Sandhu, 2016). Thus, the study implemented an adequate sample size with widely accepted instrumentation for the measurement of PsyCap and stress variables.

The authors made a few significant findings relative to PsyCap and stress. Data analysis involved descriptive statistics (mean, median, mode, and standard deviation) and t-test correlation analysis of the relationship between PsyCap and stress, and any differences in gender and area of study (major) (Kaur & Kaur Sandhu, 2016). Kaur and Kaur Sandhu (2016) found that 51.5% of students possessed below average levels of PsyCap. Additionally, the authors found gender and area of study differences. Male students typically scored lower than female students, and science majors usually scored

lower than art and professional studies majors (Kaur & Kaur Sandhu, 2016). Further, the authors found a statistically negative relationship between PsyCap and stress among all University students sampled (Kaur & Kaur Sandhu, 2016). Therefore, individuals low in PsyCap maybe more likely to experience higher levels of stress, particularly if the University students are male or science majors.

Level of schooling may not be of significance regarding the association between PsyCap and stress. Kaur and Amin (2017) found a negative correlation between PsyCap and stress in a study involving high school students. Kaur and Amin (2017) conducted a quantitative correlational study of 200 eleventh and twelfth-grade high school students affiliated with the Punjab School Education Board in Patiala, district of Punjab. One hundred of the students sampled were male, and 100 students were female (Kaur & Amin, 2017). PsyCap was measured through the Psychological Capital Questionnaire, while the Personal Stress Source Inventory (PSSI) was used to measure stress (Kaur & Amin, 2017). Data analysis involved descriptive statistics (mean, median, mode, and standard deviation), t-test correlation in studying gender differences in PsyCap and stress, and ANOVA regarding the analysis of the association between PsyCap and stress (Kaur & Amin, 2017). Similar to the findings of Kaur and Kaur Sandhu (2016), Kaur and Amin (2017) found a statistically significant negative relationship between PsyCap and stress. However, contrary to previous findings by Kaur and Kaur Sandhu (2016), no significant differences were found between gender regarding the level of PsyCap or stress in high school students (Kaur & Amin, 2017). Thus, there is support in the findings that PsyCap is negatively associated with stress regardless of the level of schooling, but contradicting findings related to gender.

There has also been significant literature exploring the relationship between PsyCap, engagement, and well-being. Researchers have identified an association between PsyCap, engagement, and well-being (Adil & Kamal, 2016; Ahmed, Umrani, Pahi, & Shah, 2017; Datu & Valdez, 2016; Dewal & Kumar, 2017; Singh, 2015). Adil and Kamal (2016) conducted a quantitative correlational study of the relationship between Psychological Capital, authentic leadership, work engagement, and job-related well-being. Participants included 500 university teachers in the Punjab province and capital of Islamabad (Adil & Kamal, 2016). Of the participants sampled, 197 were faculty members of the natural sciences, and 303 were faculty members of the arts and social sciences (Adil & Kamal, 2016). The Psychological Capital Questionnaire measured PsyCap, while the Authentic Leadership Questionnaire measured Authentic Leadership in the study (Adil & Kamal, 2016). Further, the researchers measured work engagement using the Utrecht Work Engagement Scale, and the Job-Related Affective Well-Being Scale (JAWS) was used to measure well-being (Adil & Kamal, 2016). All of the instruments utilized are self-report instruments using a Likert scale and ordinal data. Goodness-of-fit and multivariate correlation analysis findings indicated that in addition to a robust positive relationship between PsyCap and authentic leadership, PsyCap was also positively associated with work engagement and job-related well-being (Adil & Kamal, 2016). These findings indicated that teachers with higher PsyCap are likely to be more engaged and motivated, as well as report higher levels of well-being (Adil & Kamal, 2016). Thus, a positive association exists between PsyCap, engagement, and well-being.

Additionally, constructs of PsyCap are significant predictors of career adaptability in students. For example, Buyukgoze-Kavas (2016) conducted a quantitative correlational

study of the relationship between positive psychological traits (Hope, Optimism, and Resiliency) with career adaptability, or the capacity and readiness of an individual to adjust and transition to the challenges of the work world. The author sampled 415 undergraduate students in Turkey using a self-report questionnaire that included components specific to career adaptability, Hope, Optimism, Resiliency, and general demographic information (Buyukgoze-Kavas, 2016). Pearson product-moment correlation and multiple regression analysis were implemented to examine the relationships among all study variables (Buyukgoze-Kavas, 2016). The author found that Hope, Resilience, and Optimism were positive predictors of career adaptability (Buyukgoze-Kavas, 2016). Thus, students that are more hopeful, resilient, and optimistic are more likely to perceive themselves as adaptable in their future careers and transition more effectively into the workplace.

Additionally, previous research has studied the relationship between PsyCap and burnout syndrome. PsyCap is associated with reduced burnout syndrome in the workplace (Wang et al., 2017; Yim et al., 2017). For example, Demir (2018) conducted a correlational study of PsyCap, stress, and anxiety on burnout, job satisfaction, and job involvement in a sample of 335 teachers in Turkey. The author found that individuals with higher competency in PsyCap experience decreased stress, anxiety, and burnout, along with increased job satisfaction and involvement (Demir, 2018). Finally, increased PsyCap is also correlated with reduced Academic Burnout in medical students in Iran (Rad et al., 2017). Thus, there is a negative correlation between PsyCap and burnout syndrome in both the workplace and educational environments.

In summary, PsyCap is a positive psychology construct consisting of Hope, Efficacy, Resilience, and Optimism resources. PsyCap is positively associated with well-being, engagement, motivation, positive study and learning habits, and academic achievement (Siu, Bakker, & Jiang, 2014). Additionally, individuals with higher levels of PsyCap are likely to have less stress and burnout, both in the workplace and the academic environment (Kaur & Amin, 2017; Kaur & Kaur Sandhu, 2016; Rabenu & Yaniv, 2017; Rad et al., 2017; Wang et al., 2017; Yim et al., 2017). Further study as to the correlation of PsyCap and Academic Burnout in countries other than Iran is recommended (Rad et al., 2017). Based on the current literature related to PsyCap, it was therefore warranted to study whether PsyCap is a predictor of Academic Burnout in American post-graduate health science students.

Literature related to sub-variable: "Hope". The Hope resource involves the capacity for problem-solving and planning needed for an individual to succeed. Hope is a higher order cognitive process in which an individual establishes clearly defined goals and develops appropriate strategies to optimize goal completion (Li, Yin, Yang, & Tian, 2018). Hope is a state-like characteristic that has been found to positively correlate with positive psychology qualities and emotions, such as self-esteem (Du, King, & Chu, 2016) and subjective well-being (Bai, Kohli, & Malik, 2017; Brazeau & Davis, 2018). Hope has also been found to positively correlate with other positive psychology constructs, such as self-efficacy (Ben-Naim, Laslo-Roth, Einav, Biran, & Margalit, 2017), life satisfaction (Oliver, Tomás, & Montoro-Rodriguez, 2017; Rew, Slesnick, Johnson, Aguilar, & Cengiz, 2019), and resiliency (Togo, Caz, & Kayhan, 2018; Youssef & Luthans, 2007). Conversely, Hope has been found to negatively correlate with negative psychology

qualities and emotions, such as depression (Salloum, Bjoerke, & Johnco, 2019), anxiety (Munoz et al., 2018), and academic or occupational fatigue (Reichard, Avey, Lopez, & Dollwet, 2013; Yarcheski & Mahon, 2014). Regarding the workplace, Hope is associated with important vocational outcomes, such as organizational commitment, employee retention (Luthans, Norman, Avolio, & Avey, 2008; Rehman, & Mubashar, 2017), and employee burnout (Rushton, Batcheller, Schroeder, & Donohue, 2015). Further, Hope may serve as a protective agent of stress and self-esteem for university students. Hope was found to mediate the risk of stress and low self-esteem in students transitioning to the university setting (Besser & Zeigler-Hill, 2014; Mason, 2017). In other words, Hope may serve as an active mediator agent to help students successfully transition to progressive academic levels.

For example, previous research has studied the relationship of Hope with several variables in the education environment. Hope was found to mediate levels of loneliness, resiliency, and academic self-efficacy in students with learning disabilities as they transitioned into undergraduate studies (Feldman, Davidson, Ben-Naim, Maza, & Margalit, 2016). Similarly, developing Hope in middle school students mitigates risks and promotes opportunities for growth following the transition from the elementary to the middle school setting (Akos & Kurz, 2016). Additionally, Hope directly influences improved academic achievement in university students (Kivlighan et al., 2018). Feldman, Davidson, and Margalit (2015) found a positive association between grade performance (academic achievement) and the development of Hope after participants attended a Hope intervention workshop. Similarly, Crane (2014) found a positive correlation between goal pursuit and actual exam performance in university undergraduate students. Thus, Hope is

positively associated with successful grade transition, academic achievement, and goal achievement.

In summary, Hope is a positive psychology resource valuable in goal planning and achievement. Hope is a construct associated with Psychological Capital that has been shown to correlate with self-efficacy (Ben-Naim et al., 2017), life satisfaction (Oliver et al., 2017; Rew et al., 2019), and resiliency (Togo, Caz, & Kayhan, 2018; Youssef & Luthans, 2007) in students and employees. Hope has also been shown to be a protective factor in the development of depression (Salloum, Bjoerke, & Johnco, 2019), anxiety (Munoz et al., 2018), academic or occupational fatigue (Reichard et al., 2013; Yarcheski & Mahon, 2014), stress and lower self-esteem (Besser & Zeigler-Hill, 2014; Mason, 2017), and loneliness (Feldman et al., 2016) in students and employees. Finally, Hope has been shown to help with the successful transition into progressive academic levels (Du et al., 2016; Besser & Zeigler-Hill, 2014) and increase overall academic achievement (Crane, 2014; Feldman et al., 2016; Kivlighan et al., 2018). While Hope is a positive factor in grade transition and academic achievement, little is known as to its predictive relationship with Academic Burnout.

Literature related to sub-variable: "Efficacy". The Efficacy resource refers to an individual's inherent belief in their capacity to be successful. Self-efficacy refers to the perceived notion that one's capabilities directly lead to the successful planning and completion of a specific course of action (Bandura, 1997, p. 3). Bandura (1997) argued that higher self-efficacy produces more significant cognitive processing of information, indicating that challenging, yet successful, learning opportunities (modes of treatment) can facilitate the development of greater self-efficacy. Successful repetitive completion

of activities and tasks that are challenging will improve the individual's perception of their behavioral Competence of said activities and tasks (Bandura, 1997). Therefore, the higher the self-efficacy, the more likely the individual will persist through challenging activities and learning opportunities (Bandura, 1997). In other words, a positive relationship exists between Efficacy and task accomplishment.

Factors associated with self-efficacy has been widely studied by researchers. For example, self-efficacy is negatively correlated with depressive symptoms and disorders (Tak, Brunwasser, Lichtwarck-Aschoff, & Engels, 2017) and stress (Burger & Samuel, 2017). Active coping and reduced symptomatology following abuse or trauma is positively correlated with self-efficacy (Guerra, Farkas, & Moncada, 2018). Mindfullness has been found to predict self-efficacy in nurses, which in turn positively influences effective communication (Sundling, Sundler, Holmström, Kristensen, & Eide, 2017). Researchers have also provided empirical support for the positive impact of self-efficacy in the academic environment (Alkharusi, Al Sulaimani, & Neisler, 2019; Anders, 2018; Henderson, Rowe, Watson, & Hitchen-Holmes, 2016; Kurtovic, Vrdoljak, & Idzanovic, 2019; Ramos Salazar & Hayward, 2018; Shi, 2016; Usher, Li, Butz, & Rojas, 2019). Self-efficacy has been found to predict critical thinking (Alkharusi, Al Sulaimani, & Neisler, 2019) and negatively correlate with procrastination and maladaptive perfectionism (Kurtovic, Vrdoljak, & Idzanovic, 2019) in university students. Similarly, self-efficacy was found to predict positive motivation, test performance, and grade expectation in university students (Ramos Salazar & Hayward, 2018). Self-efficacy was also found to positively correlate with grit and overall academic success in middle-school and high-school students (Usher, Li, Butz, & Rojas, 2019).

Additionally, Ernst, Bowen, and Williams (2016) conducted a quantitative correlational study on the relationship between academic self-efficacy, students identified as at-risk students for non-matriculation, and students identified with satisfactory matriculation status. The authors sampled a total of 103 freshman undergraduate engineering students from a university in the Midwest United States (Ernst et al., 2016). Participants completed a self-report questionnaire that included the Self-Efficacy for Learning measure (SEL) (Ernst et al., 2016). Participants were then divided into at-risk and not at-risk for matriculation groups based on grade-point average (GPA), with 3.0 serving as the threshold (Ernst et al., 2016). Ultimately, 22 students were at-risk based on a GPA of less than 3.0, and 81 students were not at-risk based on a GPA of greater than 3.0 (Ernst et al., 2016). Therefore, the authors were able to study the similarities and differences between the two groups of students classified as either at-risk or not at-risk.

The study revealed several key findings. Data analysis included a Cronbach's alpha to measure the internal consistency of the SEL as well independent t-test analysis to conduct group comparison regarding the potential association between academic self-efficacy and at-risk students for matriculation in undergraduate engineering school (Ernst et al., 2016). The results revealed a Cronbach's alpha of 0.94, indicating significant internal consistency for the SEL questionnaire (Ernst et al., 2016). Additionally, the authors found that academic self-efficacy was higher for the group of students identified as not at-risk than the group defined as at-risk for matriculation based on GPA (Ernst et al., 2016). Based on the results of the study, the authors concluded that self-efficacy correlated with higher academic performance, determination to succeed, and persistence in undergraduate students, ultimately reducing the at-risk potential for dropout (Ernst et

al., 2016). Conversely, students at-risk for potential drop-out may have lower self-efficacy and reduced determination and persistence to succeed.

Additionally, previous research has explored the relationship between self-efficacy and Resilience. Self-efficacy has been found to strongly correlate with increased Resilience (Cassidy, 2015; Narayanan & Weng Onn, 2016). Cassidy (2015) conducted a quantitative correlational study to examine the relationship between academic self-efficacy and academic resilience. Cassidy (2015) sampled 435 British undergraduate students, who completed a self-report questionnaire, including the General Academic Self-Efficacy Scale (GASE) and the Academic Resilience Scale (ARS-30). The ARS-30 instrument contains either a personal or vicarious vignette that the students complete using Likert ratings for each of the thirty Resilience questions (Cassidy, 2015). Therefore, the author divided the participants into three separate groups: one group that completed only the personal vignette, one group that completed only the vicarious vignette, and one group that completed both vignettes (Cassidy, 2015). This design allowed the researcher to conduct a group analysis for similarities and differences among the three classified groups.

The author conducted a linear regression analysis of the three groups. The author found that academic self-efficacy significantly and positively correlated with academic resilience in all three groups, with the most significant effect size occurring in the personal vignette group (Cassidy, 2015). Further, the author conducted ANOVA and MANOVA data analysis for group comparison to identify differences between lower and higher scoring self-efficacy students in their specific responses to adversity (Cassidy, 2015). The author found that students scoring higher in academic self-efficacy also

scored higher in academic resilience, regardless of which vignette group the student was assigned (Cassidy, 2015). Finally, no differences were found in the analysis of the relationship between self-efficacy and resilience using different demographic considerations, including age, gender, or year of study (Cassidy, 2015). Therefore, the author concluded that academic self-efficacy is a significant predictor of increased academic resilience in undergraduate students (Cassidy, 2015). Thus, if a university student's capacity for Efficacy is high, the student's capacity for Resilience is also likely high.

Finally, previous research has studied the relationship between self-efficacy and academic achievement. Researchers have shown a positive association between self-efficacy and academic achievement (Bandura, 1997; Broadbent, 2016; Johnson, 2017). For example, Broadbent (2016) conducted a quantitative correlational study regarding the relationship between academic achievement (grade) with multiple variables, including self-efficacy, motivation, an internal locus of control, among others. Broadbent (2016) sampled 310 undergraduate students in Health Psychology from an Australian university. Participants completed a self-report questionnaire, including elements of self-efficacy, motivation, and locus of control, among others (Broadbent, 2016). Final semester grades for the Health Psychology course were used to measure academic achievement (Broadbent, 2016). Following multiple regression analysis, academic achievement was found to have a positive relationship with self-efficacy and a negative association with lack of motivation and locus of control (Broadbent, 2016). The author did not find any other significant correlations among study variables leading the author to contend that self-efficacy is the most significant predictor of academic achievement based on the

results of the study (Broadbent, 2016). Thus, if a university student has a high capacity for self-efficacy, the student likely has a high probability for academic achievement.

In summary, self-efficacy is an individual's inherent belief in their capacity to be successful. Self-efficacy is the belief that success is directly dependent on one's competence, aptitude, and skill (Bandura, 1997). Self-efficacy has been shown to serve as a protective factor in student dropout (Ernst et al., 2016). Further, self-efficacy has been shown to positively influence academic resilience in students (Cassidy, 2015). Finally, self-efficacy is a significant predictor of academic achievement in undergraduate students (Broadbent, 2016). These findings support the claim by Bandura (1997) that students with higher self-efficacy are more likely to persist through challenges and achieve success with learning opportunities (Bandura, 1997). While self-efficacy has been shown to have a positive impact on resilience, academic achievement, and persistence to goal achievement, little is known as to its predictive relationship with Academic Burnout.

Literature related to sub-variable: "Resilience". The Resilience resource refers to an individual's ability to overcome barriers to achieve success. Resilience is a state-like construct that promotes the ability to overcome challenges that often enable individuals to excel in situations in which others may not (Cassidy, 2016). Researchers have determined a wide range of factors associated with resilience, including trauma recovery (Cénat, Derivos, Hébert, Amédée, & Karray, 2018; Eakman, Schelly, & Henry, 2016; Happer, Brown, & Sharma-Patel, 2017; Sattler & Font, 2018), mitigating effects of bullying and cyberbullying (Hinduja & Patchin, 2017), and psychosocial development through the lens of Differential Impact Theory (Ungar, 2018). All higher education students will likely experience problems and potential failures at some point along their

educational journey, suggesting that resiliency may be a valuable characteristic associated with academic achievement and persistence to graduate (Cassidy, 2016; Sanderson & Brewer, 2017; Van Hoek, Portzky, & Franck, 2019).

For example, Beauvais, Stewart, DeNisco, and Beauvais (2014) conducted a descriptive correlational study of 124 graduate and undergraduate nursing students at a private Catholic university in New England. Beauvais et al. (2014) aimed to describe the relationship between emotional intelligence, empowerment, resilience, spiritual well-being, and academic success as measured by GPA. Beauvais et al. (2014) found a significant positive correlation between emotional intelligence, empowerment, and resilience with GPA. Further, Hartley (2011) conducted a study of 605 undergraduate students from two Midwestern four-year Universities using hierarchical regression analysis to examine whether interpersonal and intrapersonal variables associated with resilience predict grade point average (GPA), sense of belonging, mental health, and academic persistence. The results of the study by Hartley (2011) revealed that intrapersonal resilience, as measured by the Conor-Davidson Resilience Scale (CD-RISC), positively influenced GPA and number of credits completed (persistence) (p. 601). Thus, Resilience may positively impact academic achievement, mental health, and academic persistence.

Previous research as to the relationship between Resilience and academic performance has been considerable. Resilience has been shown to positively correlate with improved academic performance, such as GPA (Beauvais et al., 2014; Hartley, 2011; Van Hoek et al., 2019). Resilience has also been shown to be a positive factor in increased retention or persistence (Cassidy, 2016; Hartley, 2012; Sinicrope, Eppler,

Preston, & Ironsmith, 2015; Van Hoek et al., 2019) and goal achievement in the presence of stressful conditions that would ordinarily place students at risk of dropout (Jowkar, Kojuri, Kohoulat, & Hayat, 2014). Additionally, Resilience is also associated with the reduction of PTSD symptoms and may be a factor in preventing burnout syndrome in healthcare professionals (Mealer et al., 2016). Thus, Resilience may be a protective factor in the prevention of stress and burnout.

Finally, previous research has investigated predictive factors of Resilience in the academic environment. In a seminal article by Martin and Marsh (2006), academic resilience was found to be a valid and reliable predictor of several significant educational and psychological outcomes in students. Martin and Marsh (2006) conducted a quantitative correlational study with construct validity, and path analysis approaches to examine predictors of academic resilience and establish a new construct model for the empirical assessment of academic resilience. The sample involved 402 high school students in grades 11 and 12 that participated in the study and completed a series of three self-report survey instruments (Martin & Marsh, 2006). The survey comprised of academic resilience items, between-network motivation and engagement predictors, and between-network educational and psychological outcomes (Martin & Marsh, 2006). The authors conducted a confirmatory factor analysis and Cronbach's alpha analysis to test the validity and reliability of a proposed model of academic resilience for empirical assessment (Martin & Marsh, 2006). The proposed model yielded good internal consistency with a Cronbach's alpha of 0.89 (Martin & Marsh, 2006). The authors found a CFI of 0.98 and an NNFI of 0.96, indicating strong goodness of fit for the model

(Martin & Marsh, 2006). Thus, the findings provide support for the validity and reliability of the model.

Further correlation analysis was conducted to determine possible predictors of academic resilience. The investigation revealed that self-efficacy, planning, persistence, anxiety (negatively), and uncertain control (negatively) are predictor correlates (Martin & Marsh, 2006). Path analysis was then conducted to determine the relative contribution of these five factors to academic resilience and test the predictive capacity of these factors on the educational and psychological outcome constructs of class participation, enjoyment of school, and general self-esteem (Martin & Marsh, 2006). The authors found that all five factors were significant predictors of academic resilience, with the most considerable element identified as anxiety (negative) (Martin & Marsh, 2006). Further, academic resilience was found to be the strongest predictor of the educational and psychological outcome constructs of class participation, enjoyment of school, and general self-esteem (Martin & Marsh, 2006). Based on these results, the authors proposed a 5-C model of academic resilience based on the five predictor variables of confidence (self-efficacy), coordination (planning), control, composure (low anxiety), and commitment (persistence) (Martin & Marsh, 2006). In other words, high self-efficacy, high planning, high control, low anxiety, and high persistence predict high academic resilience.

In summary, Resilience refers to an individual's ability to overcome barriers to achieve success. Resilience involves the ability to overcome challenges that often enable individuals to excel in situations in which others may not (Cassidy, 2016). Resilience has been shown to positively impact academic achievement (Beauvais et al., 2014; Hartley, 2011; Van Hoek et al., 2019) and retention or persistence (Cassidy, 2016; Hartley, 2012;

Sinicrope et al., 2015; Van Hoek et al., 2019). Resilience has been shown to positively influence class participation, enjoyment of school, and general self-esteem in students (Martin & Marsh, 2006). Resilience is also negatively correlated with anxiety, indicating that student's experiencing high levels of anxiety are likely to be less resilient, while students with lower levels of anxiety are expected to demonstrate higher levels of academic resilience (Martin & Marsh, 2006). While Resilience has been shown to have a positive impact on academic achievement, persistence, and anxiety, little is known as to its predictive relationship with Academic Burnout.

Literature related to sub-variable: "Optimism". The Optimism resource refers to an individual's perception that their outcome will likely be a positive success. Optimism is a state-like characteristic that promotes positive psychological health and well-being (Farber, 2016; Jiménez, Montorio, & Izal, 2017; Wassermann, & Hoppe, 2019; Willis et al., 2016), and correlates with reduced lonliness and suicide risk (Chang et al., 2018), enhanced resilience (Rathore, 2017) and life satisfaction (Cabras & Mondo, 2018; Rathore, 2017; Rew et al., 2019). Research has shown a positive association between Optimism and career motivation (Fang, Zhang, Mei, Chai, & Fan, 2018), goal pursuit, and attainment (Ionescu, 2017). Ionescu (2017) conducted a quantitative correlational study to examine the predictive capacity of personality variables on achieving goals and satisfying basic psychological needs (the need for autonomy, competence, and relatedness). The authors sampled 231 participants from the general population that has completed higher education (Ionescu, 2017). Thus, the study implemented a sufficient sample size to draw general conclusions from the higher education population.

The study also implemented widely accepted, valid, and reliable instrumentation. Participants completed self-report questionnaires that included information related to the Sheldon and Elliot Self-Concordance Scale (1999), the Life Orientation Test, the Zuckerman-Kuhlman Personality Questionnaire neuroticism scale, the Self-Authenticity Scale, and the satisfaction of basic psychological needs scale (Ionescu, 2017). The authors conducted a linear regression analysis and found that self-concordance in goal pursuit, motivational persistency, past and present effort in goal achievement, self-authenticity, and dispositional optimism (Ionescu, 2017). Additionally, goal attainment was found to be a significant predictor of an individual's satisfaction of basic psychological needs (Ionescu, 2017). Thus, dispositional Optimism serves as a positive factor in an individual establishing and attaining goals, which in turn may positively influence the satisfaction of basic psychological needs (well-being) (Ionescu, 2017). In other words, Optimism may be a predictive correlate of emotional well-being for individuals in the higher education setting.

Additionally, previous research has studied the relationship between Optimism and social competence. Tariq and Zubair (2015) identified a positive association between high individual optimism and an individual's social competence, which involves the social, emotional, cognitive, and behavioral skills necessary to act wisely in human relations and successfully adjust to the environment (Tariq & Zubair, 2015). Tariq and Zubair (2015) sampled 300 university students in Pakistan with an age range of 20-25 years. The authors used step-wise regression analysis and found a significant positive correlation between Optimism and social competence, regardless of gender or income considerations (Tariq & Zubair, 2015). Thus, individuals with higher learned Optimism

have the capacity for developing more significant social support networks, the achievement of goals, and improved happiness by enhancing individuals' positive feelings of oneself (Tariq & Zubair, 2015). In summary, previous research has found that Optimism is a predictive factor in goal achievement and emotional well-being. While Optimism is positively associated with social competence, there is a lack of empirical research investigating the predictive relationship between Optimism and Academic Burnout.

Relationship between burnout and health professions. Burnout syndrome is an important societal issue owing to its high prevalence. Burnout syndrome is a common occurrence in healthcare professions, including nurses (Arrogante & Aparicio-Zaldivar, 2017; Kutluturkan et al., 2016) and physicians (Back et al., 2016; Panagioti et al., 2018). Additionally, medical students, trainees, and most medical specialty professionals examined commonly experience burnout syndrome (Lebares et al., 2018). For example, over 40% of healthcare professionals in front-line medical settings (family medicine, emergency medicine, critical care medicine, and general internal medicine) experience burnout syndrome (Mealer et al., 2016). Further, Adriaenssens et al. (2015) conducted a systematic review of 17 empirical quantitative studies on burnout in emergency nurses between 1989 and 2014 and found that on average, 26% of emergency nurses experience burnout syndrome. Thus, burnout syndrome is a widespread issue across the landscape of healthcare professionals.

There are multiple risk factors associated with the development of burnout syndrome. These are typically classified as either individual risk factors or organizational risk factors (Mealer et al., 2016). Individual risk factors are personal causes and

considerations, such as poor self-esteem, ineffective coping skills, and unrealistically high expectations (Mealer et al., 2016). Lebares et al. (2018) found that surgical residents with high levels of stress, anxiety, and depression symptoms are at higher risk of burnout syndrome. Adriaenssens et al. (2015) report that lower levels of commitment and avoidant behavior coping skills are positive predictors of individuals experiencing burnout syndrome in a systematic review of literature related to emergency nurses. Additionally, Amoafo et al. (2015) conducted a systematic literature review of 47 studies related to burnout syndrome in physicians. Key findings from the study indicate that younger age and low job satisfaction are positive predictors of burnout syndrome in doctors (Amoafo et al., 2015). Therefore, it is possible that age may be an important factor associated with burnout syndrome.

However, age has received conflicting evidence as to whether it is an individual risk factor associated with burnout syndrome. Younger age is a predictor of burnout syndrome in several studies (Amoafo et al., 2015; Gómez-Urquiza et al., 2017; Gouveia et al., 2017; Sanfilippo et al., 2017). However, multiple studies have found no association between age and burnout syndrome (Arrogante & Aparicio-Zaldivar, 2017; De la Fuente-Solana et al., 2017; Kandelman et al., 2017). Further, Guo et al. (2015) found that middle-aged (31-50) iron and steel workers in China were more likely to experience burnout than those individuals that are younger than 31 or older than 50. Thus, there is considerable conflicting evidence as to whether age is a valid and reliable predictor variable for burnout syndrome.

Some authors have purported that experience level, rather than age, is a risk factor associated with burnout syndrome due to inconsistent findings in the literature. For

example, Iorga et al. (2017) found that more considerable work experience reduced the risk of burnout syndrome in physicians and residents, particularly Depersonalization and Personal Accomplishment categories. Similarly, Kutluturkan et al. (2016) found a negative correlation between greater time working in the field and burnout syndrome in oncology nurses, particularly regarding the Emotional Exhaustion and Depersonalization constructs. Finally, McKinley et al. (2017) found that medical residents were more likely to experience burnout syndrome earlier in the program than later, indicating that less experience in the field is a factor in medical residents experiencing burnout syndrome. Therefore, experience level may be a more valid and reliable predictive factor of burnout syndrome than age.

Another element that has received conflicting evidence as to whether it is a factor related to burnout syndrome is gender. Amoafo et al. (2015) found that female gender was a positive predictor of burnout syndrome in physicians. Additionally, McKinley et al. (2017) report that overall burnout rates are typically even between genders. However, female medical residents are more likely to experience Emotional Exhaustion while male medical residents are more likely to experience Depersonalization aspects of burnout syndrome (McKinley et al., 2017). Similarly, Gouveia et al. (2017) also found that female medical residents were more likely to experience Emotional Exhaustion while male medical residents were more likely to experience Depersonalization aspects of burnout syndrome. Conversely, Sanfilippo et al. (2017) found inconsistent results related to gender and burnout syndrome, with the majority of the studies indicating males are more at risk, with one study reporting females are more at risk and one study that found no differences. Adriaenssens et al. (2015) also found mixed results related to gender, with

some literature indicating a stronger positive relationship between the female gender and burnout syndrome, some reporting the opposite link, and some that found no correlation. Finally, several authors found no association between gender and risk of burnout syndrome (Arrogante & Aparicio-Zaldivar, 2017; De la Fuente-Solana et al., 2017; Nowakowska-Domagala et al., 2015; Kandelman et al., 2017; Lebares et al., 2018). Thus, there is considerable conflicting evidence as to whether gender is a valid and reliable predictor variable for burnout syndrome.

Marital status is another individual risk factor that has received inconsistent findings as to its relationship with burnout syndrome in the current literature. For example, De la Fuente-Solana et al. (2017) conducted a quantitative correlational study of variables related to occupational burnout syndrome in a sample of 676 nursing professionals in Spain. Regarding marital status, De la Fuente-Solana et al. (2017) found that married nurses are more susceptible to Emotional Exhaustion but have higher levels of Personal Accomplishment than unmarried nurses. Conversely, Gómez-Urquiza et al. (2017) conducted a meta-analysis of risk factors associated with burnout syndrome in nursing professionals and found that marriage served as a moderator between increasing age and burnout syndrome. Finally, Gouveia et al. (2017) conducted a quantitative correlational study exploring risk factors associated with occupational burnout syndrome in a sample of 129 resident physicians in Brazil. The results of the study indicate that unmarried resident physicians were more likely to experience all dimensions of burnout syndrome when compared with married resident physicians (Gouveia et al., 2017). Thus, there is considerable conflicting evidence as to whether marital status is a valid and reliable predictor variable for burnout syndrome.

Organizational risk factors are environmental type considerations that predispose individuals to develop burnout syndrome. Heavy workload requirements, diminished resources, frequent conflict with co-workers, understaffing, and imbalance of reward recognition to work effort, are organizational factors associated with burnout syndrome (Adriaenssens et al., 2015; Mealer et al., 2016). Similarly, in a systematic review of 53 articles related to burnout in European healthcare professionals conducted by Bria, Băaban and Dumitraşcu (2012), imbalance of reward recognition to work effort and heavy workload, whether objective or perceived, are substantial factors associated with employees developing burnout syndrome in the workplace. Additionally, perceived lack of job control and incongruence of values between the employee and the organization are significant factors associated with occupational burnout syndrome (Bria et al., 2012). Finally, low social support from colleagues and supervisors is a factor correlated with occupational burnout syndrome, particularly regarding the Emotional Exhaustion component (Bria et al., 2012). Thus, heavy workload, imbalance of reward recognition to work effort, and perceived lack of support and control may be significant predictor correlates of burnout syndrome.

Burnout syndrome in healthcare professionals may result in significant consequences. These consequences may include alcohol abuse, suicidal ideation, high employee turnover rate, decreased quality and production of work performance, lower patient satisfaction, increased medical errors and negligence, and post-traumatic stress disorder (PTSD) (Mealer et al., 2016). Concerning emergency nurses, Adriaenssens et al. (2015) found a significant link between burnout syndrome and PTSD with repeated exposure to traumatic events, such as patient suffering, injuries, aggression, and death.

Musculoskeletal disorders, obesity, and depression are also common consequences individuals experience concerning burnout syndrome (Motta de Vasconcelos, Figueiredo De Martino, & de Souza França, 2018; Sorour & El-Maksoud, 2012). Researchers have found several factors associated with a decreased risk of burnout syndrome. For example, Adriaenssens et al. (2015) found that promotion of professional autonomy, positive interdisciplinary collaboration and communication, reduction of repeated exposure to traumatic events, training in the development of effective coping skills, and team spirit are significant factors in the prevention of burnout syndrome in emergency nurses. Therefore, empowerment of control, positive communication, coping skills, and limited exposure to trauma may prevent the significant consequences of burnout syndrome in healthcare professionals.

In summary, burnout syndrome is a significant societal problem. Occupational burnout syndrome is a common occurrence among healthcare professionals (Adriaenssens et al., 2015; Mealer et al., 2016). Individual risk factors associated with burnout syndrome in healthcare professionals include stress, ineffective coping skills, and low job satisfaction (Adriaenssens et al., 2015; Amoafo et al., 2015; Lebares et al., 2018; Mealer et al., 2016). Individual risk factors such as age, gender, and marital status have inconsistent and controversial findings in the literature (Adriaenssens et al., 2015; Amoafo et al., 2015; Arrogante & Aparicio-Zaldivar, 2017; De la Fuente-Solana et al., 2017; Gómez-Urquiza et al., 2017; Gouveia et al., 2017; Guo et al., 2015; Kandelman et al., 2017; Lebares et al., 2018; Nowakowska-Domagala et al., 2015; Sanfilippo et al., 2017). Level of experience is one individual risk factor that ought to be incorporated as a potential predictor of burnout syndrome (Iorga et al., 2017; Kutluturkan et al., 2016;

McKinley et al., 2017). Organizational risk factors associated with occupational burnout syndrome in healthcare professionals include heavy workload and imbalance of reward recognition to work effort (Adriaenssens et al., 2015; Bria et al., 2012; Mealer et al., 2016). Mental health concerns, such as depression, suicidal ideation, and PTSD are potential consequences of burnout syndrome in healthcare professionals (Adriaenssens et al., 2015; Mealer et al., 2016; Motta de Vasconcelos et al., 2018; Sorour & El-Maksoud, 2012). Fostering effective coping, and positive organizational considerations, such as empowering professional autonomy, interdisciplinary collaboration, and communication, and promoting positive team spirit, are preventative factors associated with occupational burnout syndrome in healthcare professionals (Adriaenssens et al., 2015; Arrogante & Aparicio-Zaldivar, 2017). Therefore, due to the widespread incidence and negative consequences of burnout syndrome in the workplace, it may be of importance to research burnout syndrome in students aspiring to enter the health professions workforce.

Burnout and success outcomes. Success is an important indicator of institutional performance, including in higher education. Success in higher education typically equates to outcome data, such as graduation and retention rates, degree conferment, academic achievement, test scores, job satisfaction, and employee turnover rates, among others (Baldwin, Bensimon, Dowd, & Kleiman, 2011; Burns, 2010). Burnout is inversely associated with positive success outcomes in the current literature (Mathar, 2011; Schaufeli et al., 2002; Shanafelt & Noseworthy, 2017; Souba, 2016; Underdahl, Jones-Meineke, & Duthely, 2018). For example, Academic Burnout is significantly and negatively correlated with academic performance, such as grade point average (Asayesh et al., 2016; Schaufeli et al., 2002). Asayesh et al. (2016) found that nursing and

paramedic students that experience higher levels of stress were more likely to experience burnout. Additionally, the nursing and paramedic students that experienced burnout had poorer overall academic performance (Asayesh et al., 2016). Therefore, it may be of importance to foster skills to reduce stress, and ultimately burnout, in nursing and paramedic students.

Previous research has studied the relationship between burnout and job retention. Burnout is a factor that is positively correlated with employee turnover and lower job retention (Mullen, Malone, Denney, & Dietz, 2018; Underdahl et al., 2018). Mullen et al. (2018) found that student affairs professionals that experienced higher job stress and burnout were more likely to be dissatisfied with their job and reported increased turnover intentions. Flynn, Thomas-Hawkins, and Clarke (2009) similarly found that employee turnover rate is three times more likely in nurses that report experiencing burnout. With regards to Academic Burnout, experiencing burnout was a personal factor cited by students as a reason for dropping out of nursing school (Mathar, 2011). Additionally, burnout and job dissatisfaction were prominently correlated with reduced physician and resident physician engagement and ultimately, turnover rates (Shanafelt & Noseworthy, 2017; Underdahl et al., 2018). Further, there is an inverse correlation between elements of grit and resilience with physician and resident physician burnout (Souba, 2016; Underdahl et al., 2018). Future research regarding whether fostering elements of grit and resilience may effectively reduce burnout and turnover rates in physicians is recommended (Underdahl et al., 2018). Thus, burnout is a significant negative factor in employee retention that may benefit from further study.

Psychological Capital and success outcomes. As previously stated, success in higher education typically equates to outcome data. Previous literature supports the claim that a positive association exists between PsyCap and academic achievement, such as grade point average (Datu, King, & Valdez, 2018; Martínez, Youssef-Morgan, Chambel, & Marques-Pinto, 2019; Ortega-Maldonado & Salanova, 2018). For example, Luthans, Luthans, and Jensen (2012) found that PsyCap positively influenced grade point average in students enrolled in an undergraduate business school (Luthans et al., 2012). Similarly, Gautam and Pradhan (2018) found a positive association between PsyCap and academic achievement in Indian students aged 14-18 years. Gautam and Pradhan contend that adolescent students with higher levels of PsyCap perform better academically. Siu et al. (2014) also found a positive correlation between PsyCap and intrinsic motivation and study engagement in university students in Hong Kong. These findings indicate that PsyCap may positively influence students study habits and learning processes (Adil & Kamal, 2016; Ahmed et al., 2017; Datu & Valdez, 2016; Dewal & Kumar, 2017; Gautam & Pradhan, 2018; Luthans et al., 2012; Singh, 2015; Siu et al., 2014). Therefore, the current literature provides support for a strong association between PsyCap and positive academic performance.

Finally, previous research has explored the relationship of PsyCap, academic confidence, academic coping, and academic success. Kirikkanat and Soyer (2018) conducted a quantitative causal-comparative study to examine the predictive relationship between academic confidence, Psychological Capital, and academic coping with academic success. The authors sampled 400 undergraduate students from Istanbul Commerce University and Marmara University in Turkey (Kirikkanat & Soyer, 2018).

Participants completed a self-report questionnaire, including items specific to the Academic Behavioral Confidence Scale, the Psychological Capital Test Battery, the Academic Coping Strategies Scale, and general demographic information (Kirikkanat & Soyer, 2018). The authors conducted a path analysis of structural equation modeling to examine direct and indirect hypothetical causal relations between academic confidence, Psychological Capital, academic coping, and academic success (Kirikkanat & Soyer, 2018). In other words, the authors used path analysis to examine the relationships among multiple predictors and examine if any of the variables serve as a mediator.

The study revealed significant findings relative to the importance of PsyCap relative to academic confidence and academic success. The authors found that students with higher levels of academic confidence and Psychological Capital held higher grade point averages (GPA), indicating a positive correlation between academic confidence and Psychological Capital with academic success (Kirikkanat & Soyer, 2018). The authors further found that students with higher levels of academic confidence and Psychological Capital also had higher social support and lower avoidance of academic coping strategies (Kirikkanat & Soyer, 2018). This finding indicates that students high in academic confidence and Psychological Capital are more likely to implement effective academic coping strategies and develop stronger social support networks (Kirikkanat & Soyer, 2018). Finally, the authors also found a mediational role of academic coping in the relationships between academic confidence and Psychological Capital with academic success (Kirikkanat & Soyer, 2018). The authors conclude that academic confidence and Psychological Capital are significant predictors of academic achievement, particularly in the presence of effective academic coping skills serving as a mediator (Kirikkanat &

Soyer, 2018). Thus, PsyCap is a significant predictor of academic success, particularly in those students that possess strong academic problem solving and coping skills.

Burnout and leadership. Leadership quality and effectiveness may impact the occurrence of burnout syndrome in employees and students. For example, Mo and Shi (2017) conducted a quantitative correlational study of the relationship between leaders that implement ethical leadership qualities in relationships with employees and employee burnout, deviant workplace behavior, and overall employee task performance. The authors postulated that employees would experience less burnout, react with less destructive workplace behaviors and attitudes, and produce a higher performance in workplace tasks (Mo & Shi, 2017). Mo and Shi (2017) sampled 45 team leaders and 247 employees affiliated with a pharmaceutical retail chain in South China. Questionnaires were utilized for data collection at two separate times with a three-month time interval in between (Mo & Shi, 2017). The survey at the first time of sampling involved capturing demographic information and the employees' perception of ethical leadership within their team (Mo & Shi, 2017). The questionnaire after the three-month time interval involved capturing the employees' level of trust in their leaders, the employees' experienced burnout, and the leaders' evaluation of employee deviant behavior and task performance (Mo & Shi, 2017). The findings of the study supported the authors claim that employees' perception of ethical leadership is positively associated with employee trust in leadership and negatively associated with deviant behavior and experienced burnout (Mo & Shi, 2017). Thus, the researchers identified a negative correlation between ethical leadership and burnout syndrome in South China employees of a pharmaceutical chain.

Similarly, previous literature has explored the relationship between burnout syndrome and entrepreneurial leadership practices. Steffens, Yang, Jetten, Haslam, and Lipponen (2018) conducted a quantitative correlation study to examine whether perceived entrepreneurial leadership predicts work engagement, burnout, and turnover intentions in employees. The authors sampled 138 manual workers in a solar-panel producing organization in China. Self-report surveys were administered to study participants for completion once initially and once following a ten-month time interval. Steffens et al. (2018) implemented confirmatory factor analysis and a series of linear lagged regression analyses and found that leaders with employee perceived entrepreneurial leadership qualities predicted improved work engagement, decreased burnout, and lower turnover intentions. Thus, entrepreneurial leadership practices are negatively associated with burnout syndrome in Chinese manual labor workers.

Leaders exemplifying authentic leadership qualities have also been found to influence burnout syndrome positively. For example, Spence Laschinger, Borgogni, Consiglio, and Read (2015) tested a hypothesized model linking authentic leadership practices with areas of work life, burnout, occupational coping self-efficacy, and mental health. The authors purported that authentic leadership practices would positively influence areas of work life and occupational coping self-efficacy, thereby reducing burnout and improving the mental health of employees (Spence Laschinger et al., 2015). A sample of 1009 recent nursing graduates from Canada completed standardized questionnaires in the study (Spence Laschinger et al., 2015).

The findings provided support for the authors hypothesized model that authentic leadership practices in leaders influence employees' areas of work life and occupational

coping self-efficacy in a positive manner (Spence Laschinger et al., 2015). Further, improving occupational coping self-efficacy decreased the risk of burnout and improved employees' overall mental health (Spence Laschinger et al., 2015). Thus, the findings indicated a negative correlation between authentic leadership practices and burnout syndrome in Canadian nurses.

Personality traits of the employee also correlate with the risk of experiencing burnout syndrome. For example, Yao et al. (2018) conducted a quantitative correlational study regarding the relationships between the big five personality traits, general self-efficacy, stress, and job-related burnout. The authors utilized standardized self-report questionnaires and sampled 860 nurses in China (Yao et al., 2018). The authors found that stress was an essential factor associated with job-related burnout in nurses (Yao et al., 2018). Additionally, nurses scoring high in introversion or neuroticism personality traits were more at risk of experiencing job-related burnout (Yao et al., 2018). Further, the authors found that general self-efficacy served as an effective mediator of stress in nurses, thereby reducing the risk of job-related burnout (Yao et al., 2018). In other words, general self-efficacy is negatively associated with stress and subsequently serves as a protective factor in the development of burnout among Chinese nurses.

Previous research has also explored the relationship between student personality traits and Academic Burnout. Soo Jin, Young Jun, and Han (2017) found that the personality traits of Korean medical students might impact burnout rates in medical education. Soo Jin et al. (2017) utilized Cloninger's biopsychosocial personality model as the theoretical foundation of personality and character traits for the study. This model incorporates temperament dimensions of novelty seeking (NS), harm avoidance (HA),

reward dependence (RD), and persistence (PS) (Soo Jin et al., 2017). This model also incorporates character dimensions of self-directedness (SD), cooperativeness (CO), and self-transcendence (ST) (Soo Jin et al., 2017). The sample included 178 medical students from the School of Korean Medicine in Busan (Soo Jin et al., 2017). Participants completed standardized questionnaires, including the Cloninger's TCI and the Maslach Burnout Inventory-Student Survey (MBI-SS) (Soo Jin et al., 2017). The authors conducted a Pearson correlational analysis and found a positive correlation between harm avoidance (HA) and novelty seeking (NS) personality temperament traits with Academic Burnout in Korean medical students (Soo Jin et al., 2017). Conversely, self-directedness (SD) and cooperativeness (CO) personality character traits negatively correlated with Academic Burnout in Korean medical students (Soo Jin et al., 2017). Thus, the individual personality of the student may be a factor associated with Academic Burnout in Korean medical school.

PsyCap and leadership. Researchers have studied the relationship between Psychological Capital and leadership. Psychological Capital has been found to correlate positively with leadership skill development (Guo et al., 2018; Khan, 2017; Liao, Hu, Chung, & Chen, 2017; Pitichat, Reichard, Kea-Edwards, Middleton, & Norman, 2018; Wu & Chen, 2018). For example, Khan (2017) conducted a quantitative correlational study to examine if PsyCap and psychological ownership (PsyGown) predict leadership behaviors of doctoral learners in American Universities. Khan (2017) sampled 31 doctoral students from engineering, management, business, and leadership studies across multiple Texas Universities. Participants completed a self-report questionnaire, including the Psychological Capital Questionnaire, the Psychological Ownership Questionnaire,

and the Multifactor Leadership Questionnaire (MLQ 5x). The study examined the correlational relationship between Transformational, Transactional/MBE-Active, and Passive Avoidant (MBE-Passive and Laissez Faire) leadership styles with PsyCap and PsyGown variables. Khan (2017) conducted a Pearson correlation analysis and multiple regression analysis in the study and found that a significant positive relationship exists between PsyCap and PsyGown with leadership behaviors in doctoral students. This finding supports the hypothesis that PsyCap and PsyGown are substantial predictors of leadership skills. Further, each of the four dimensions of PsyCap (Hope, Efficacy, Resilience, and Optimism) were found to be positive predictors of leadership behaviors in doctoral students (Khan, 2017). Thus, PsyCap is a significant predictor of positive leadership development in doctoral students in the state of Texas.

Additionally, there is support in the literature that a positive correlation exists between PsyCap and authentic leadership practices. PsyCap has been found to serve as a moderator in the relationship between authentic leadership practices and employee work engagement in a sample of 647 managers from a national private healthcare organization in South Africa (Marieta & Boshoff, 2018). Additionally, Jensen and Luthans (2006) conducted a quantitative correlational study to examine the relationship between PsyCap and dimensions of authentic leadership in entrepreneurs. The authors sampled 76 small business entrepreneurs and business owners (Jensen & Luthans, 2006). Participants completed self-report questionnaires regarding Psychological Capital, authentic leadership, and demographic characteristics, including business-specific demographic information (Jensen & Luthans, 2006). The authors conducted an exploratory factor analysis and a Pearson correlation analysis and found that PsyCap positively correlates

with entrepreneurs'/leaders' perception of their authentic leadership skill (Jensen & Luthans, 2006). Based on the findings of the study, PsyCap is a positive predictor of authentic leadership.

Other researchers have similarly studied the relationship between PsyCap and authentic leadership. Adil and Kamal (2016) conducted a quantitative correlational study on the relationship between Psychological Capital, authentic leadership, worker engagement, and job-related well-being in university teachers in the Punjab province and capital of Islamabad. The authors found a positive relationship between PsyCap and authentic leadership with worker engagement and job-related well-being. Additionally, Adil and Kamal (2016) found a significant positive correlation between PsyCap and authentic leadership. These findings led the authors to conclude that PsyCap positively influences authentic leadership practices, which, in turn, positively affects organizational behaviors (Adil & Kamal, 2016). Finally, Zubair and Kamal (2017) conducted a quantitative correlational study to determine if PsyCap positively mediates authentic leadership with creative work behavior in a sample of 600 bank employees from Rawalpindi and Islamabad. The authors conducted a mediation analysis and step-wise multiple regression analysis and found that PsyCap and authentic leadership were positive predictors of creative work behavior (Zubair & Kamal, 2017). Additionally, all four dimensions of PsyCap (Hope, Efficacy, Resilience, and Optimism) were found to be positive predictors of creative work behavior (Zubair & Kamal, 2017). The authors also found that PsyCap mediated the relationship between authentic leadership and creative work behavior, indicating that individuals higher in PsyCap operate with more significant creative work behaviors when their leaders implement authentic leadership practices

(Zubair & Kamal, 2017). Thus, PsyCap is both a positive predictor of authentic leadership as well as a mediator in the effects of authentic leadership with creative workplace behavior.

Relationship between PsyCap and burnout. Researcher have explored the relationship between PsyCap and burnout. Psychological Capital is negatively associated with burnout syndrome in the workplace environment (Guo et al., 2015; Wang et al., 2017; Zhou et al., 2018). For example, Guo et al. (2015) conducted a quantitative correlational study on internal and external factors related to burnout syndrome in a sample of 1,300 iron and steel workers in China. Guo et al. (2015) found a significant prevalence of burnout syndrome in the sample of iron and steel workers. Burnout syndrome was found to be higher if participants were middle-aged (31-50 years old), perceived high occupational stress through an effort-reward imbalance, perceived low organizational support, and measured low in Psychological Capital (Guo et al., 2015). Similarly, Wang et al. (2017) found a significant negative correlation between PsyCap and burnout syndrome in a sample of 1219 factory workers in China. Specifically, Wang et al. conducted a multiple regression analysis and found that high effort-low reward ratio, low self-esteem, and low PsyCap explain a significantly large proportion of the variance of burnout syndrome. Further, PsyCap was found to have a sizeable mediational role between effort-reward imbalance and burnout, indicating that individuals with lower levels of PsyCap are more likely to experience burnout syndrome if an effort-reward imbalance exists in the workplace (Wang et al., 2017). Therefore, the researchers discovered a significant and negative correlation between PsyCap and burnout syndrome in Chinese steelworkers.

Previous research has examined the relationship between resilience and burnout syndrome. Resilience is one construct of PsyCap that has been associated with the prevention and reduction of symptoms related to burnout syndrome (Arrogante & Aparicio-Zaldivar, 2017; Rosenberg, 2018; Rushton et al., 2015). Arrogante and Aparicio-Zaldivar (2017) conducted a quantitative correlational study of the mediational role of resilience with health and burnout syndrome. Arrogante and Aparicio-Zaldivar (2017) sampled 52 critical care professionals from an intensive care unit in Madrid, Spain. The authors learned that a negative correlation exists between the dimensions of burnout syndrome with health and resilience (Arrogante & Aparicio-Zaldivar, 2017). Additional analyses revealed that resilience serves as a partial mediator between Emotional Exhaustion and mental health, and as a full mediator between Personal Accomplishment and mental health (Arrogante & Aparicio-Zaldivar, 2017). These results indicate that resilience provides significant safeguarding from developing burnout syndrome and mental health problems in critical care health professionals (Arrogante & Aparicio-Zaldivar, 2017). Thus, research has identified a significant and negative association between resilience and burnout syndrome in healthcare professionals.

Additionally, previous research has investigated the relationship between resilience, hope, and burnout syndrome. Rushton et al. (2015) conducted a quantitative correlational study to identify dimensions of a healthy work environment, including an examination of the relationship between resilience, hope, and burnout syndrome in nursing professionals. Rushton et al. (2015) sampled 114 participants, mainly female (89%) nurses, using a survey that encompassed burnout syndrome, resilience, hope, moral distress, stress, and personal meaning dimensions. Results indicated that a

moderately strong negative association exists between Emotional Exhaustion and Depersonalization components of burnout syndrome and resilience in nursing professionals sampled (Rushton et al., 2015). The Personal Accomplishment component of burnout syndrome was found to have a positive association with resilience. Nursing professionals with higher levels of resilience were also found to have higher levels of hope and lower levels of stress (Rushton et al., 2015). Thus, resilience is negatively associated with burnout syndrome and positively associated with hope in nursing professionals.

The study also found significant findings regarding the relationship between hope and burnout syndrome. Rushton et al. (2015) identified a negative correlation between hope and burnout in nursing professionals. Specifically, hope was found to be significantly negatively correlated with Emotional Exhaustion (-0.34) and Depersonalization (-0.31) aspects of burnout syndrome (Rushton et al., 2015). Conversely, hope was found to have a significant positive correlation with the Personal Accomplishment (0.43) component of burnout syndrome (Rushton et al., 2015). These results indicate that as hope increases, an individual's perception of their accomplishments and efficacy increases, and their Emotional Exhaustion, Depersonalization, and cynical disposition decreases.

Previous literature has also examined the relationship between self-efficacy and burnout syndrome. Self-efficacy has been found to negatively correlate with burnout syndrome (Charkhabi, Abarghuei, & Hayati, 2013; Onuoha & Idemudia, 2017). For example, Charkhabi et al. (2013) conducted a quantitative correlational study to examine the relationship between Academic Burnout, self-efficacy, and quality of learning

experience variables. The authors sampled 233 undergraduate students from a university in Iran (Charkhabi et al., 2013). Participants completed a self-report questionnaire that included the Quality of Learning Experience Scale, the Academic Burnout scale, and the General Self-Efficacy Scale (Charkhabi et al., 2013). Based on the results of a Pearson's correlation analysis, the authors conclude that a significant negative relationship exists between self-efficacy and Academic Burnout in undergraduate students (Charkhabi et al., 2013). Additionally, the authors found an inverse relationship between Academic Burnout and students' quality of learning experience (Charkhabi et al., 2013). Based on the results of the study, interventions to increase students' self-efficacy may reduce the potential for students to experience Academic Burnout and improve their potential for quality of learning experience.

Previous literature has also explored the relationship between Optimism and burnout syndrome. Optimism has been found to negatively correlate with burnout syndrome (Boni et al., 2018). For example, Optimism is argued to be a protective factor in the development of burnout by elevating personal fulfillment and reducing Emotional Exhaustion in medical students in Brazil (Boni et al., 2018). Burnout was found to be higher in first-year medical students (Boni et al., 2018). Therefore, the authors recommend preventive measures to reduce stress and improve Optimism in first-year medical students to reduce the risk of students developing burnout (Boni et al., 2018). Barkhuizen, Rothmann, and van de Vijver (2014) also found a negative correlation between Optimism and burnout in a sample of 595 academic staff members located in South Africa. Optimism was also found to be positively associated with work engagement and organizational commitment and negatively correlated with physical and

psychological ill health (Barkhuizen et al., 2014). These findings indicate that dispositional Optimism can enhance positive work engagement and performance while reducing an individual's risk of developing burnout and ill health (Barkhuizen et al., 2014). Thus, Optimism is significantly and negatively associated with burnout syndrome.

Further, PsyCap has been found to serve as a mediator in the relationship between burnout and subjective well-being. Hansen, Buitendach, and Kanengoni (2015) conducted a quantitative correlational study to examine the relationships between Psychological Capital, subjective well-being, burnout, and job satisfaction. Further, the authors aimed to explore whether PsyCap mediates subjective well-being and burnout in South African educators (Hansen et al., 2015). The authors sampled 103 educators across four South African educational institutions (Hansen et al., 2015). Participants completed a self-report composite questionnaire consisting of a biographical data sheet, the Psychological Capital questionnaire, the satisfaction with life scale, the burnout inventory and the Minnesota job satisfaction questionnaire (Hansen et al., 2015). Pearson's correlational analysis was implemented to explore potential associations between study variables, and an exploratory factor analysis was performed to investigate underlying factors in the scales (Hansen et al., 2015). Finally, the authors used a multiple regression analysis to examine the potential mediating role of PsyCap between subjective well-being and burnout (Hansen et al., 2015).

The authors found that a negative relationship existed between PsyCap and subjective well-being (Hansen et al., 2015). The authors explained that the negative association is likely due to educators not feeling the need to draw upon the positive psychology constructs founding PsyCap when their subjective well-being is good, and

they feel a sense of satisfaction. Conversely, when subjective well-being is low, educators are more likely to rely upon the positive psychology constructs of PsyCap to help cope with the negative emotions associated with low well-being. PsyCap was also found to have a positive association with job satisfaction and a negative association with burnout, which aligned with the authors' hypotheses (Hansen et al., 2015). The authors further found that subjective well-being and burnout had a negative association, and burnout had a negative relationship with job satisfaction (Hansen et al., 2015). Based on the findings, the authors purport that subjective well-being and PsyCap are significant predictors of burnout among South African educators (Hansen et al., 2015). Finally, the authors discovered that PsyCap does have a mediating role in the relationship between subjective well-being and burnout, indicating that educators high in PsyCap levels are less likely to experience burnout when subjective well-being ratings are low (Hansen et al., 2015). Thus, PsyCap has a significant and negative predictive relationship with burnout syndrome in South African educators.

A relationship between PsyCap and workaholism has also been established. Moyer, Aziz, and Wuensch (2017) conducted a quantitative correlational study to investigate the relationships among workaholism, job burnout, and psychological capital. Further, the authors aimed to examine the potential mediating role of psychological capital on the relationship between workaholism and burnout (Moyer et al., 2017). The authors sampled 400 faculty and staff at a large Southeastern university in the United States and found a positive association between workaholism and burnout and a negative relationship between workaholism and psychological capital (Moyer et al., 2017). Further, psychological capital was found to be negatively correlated with burnout and

serve as a mediator of the relationship between workaholism and burnout among the educators and staff members sampled (Moyer et al., 2017). Thus, the authors concluded that psychological capital may minimize the negative impact of workaholism on job burnout (Moyer et al., 2017).

Additionally, the predictive relationship between PsyCap and Academic Burnout has been established in medical field post-graduate education. Rad et al. (2017) conducted a quantitative correlational study to examine the predictive relationship between Psychological Capital and Academic Burnout in a sample of 172 Iranian medical students. A significant and negative predictive relationship was found between PsyCap and Academic Burnout in Iranian medical students. Similarly, Soltani, Sadegh Mahboob, Ghasemi Jobaneh, and Yoosefi (2016) conducted a quantitative correlational study to examine the predictive relationship between psychological capital and academic burnout in a sample of 396 Iranian students. The authors established a significant and negative predictive relationship between psychological capital and academic burnout (Soltani et al., 2016). Additionally, the authors found that psychological capital successfully predicted 25% of the variance of academic burnout among Iranian students sampled (Soltani et al., 2016). Thus, the authors contend that the results importantly emphasize the role of psychological capital in reducing academic burnout among students (Soltani et al., 2016).

Methodology and instrumentation/data sources/research materials. This study aimed to examine if a predictive relationship exists between PsyCap and Academic Burnout in American post-graduate health science students. Further investigation was recommended regarding the relationship between PsyCap and Academic Burnout in a

sample of university students in countries other than Iran (Rad et al., 2017). Thus, empirical examination of the predictive relationship between PsyCap and Academic Burnout ought to utilize a quantitative research methodology. A quantitative research methodology is beneficial to investigate social phenomena in a controlled setting to facilitate justification, or the replication of predictable explanations (Park & Park, 2016). A quantitative methodology is appropriate when a research study intends to examine correlational factors between variables, which would fall under the scope of justification (Park & Park, 2016). The PCQ-24 was the instrument utilized to measure the variable PsyCap. The PCQ-24 is a valid and reliable instrument in measuring Psychological Capital and its four related sub-groups, Hope, Efficacy, Resilience, and Optimism (Luthans, Avolio, Avey, & Norman, 2007). The MBI-SS was the instrument utilized to measure the variable Academic Burnout. The MBI-SS was found to be a valid and reliable instrument in measuring Academic Burnout and its three corresponding dimensions of Exhaustion, Cynicism, and Competence (Schaufeli et al., 2002; Shi et al., 2019; Yavuz & Dogan, 2014). In summary, this study implemented a quantitative methodology and used valid and reliable instruments, such as the PCQ-24 and the MBI-SS, to measure PsyCap and Academic Burnout, respectively.

Summary

This chapter presented the background problem of burnout syndrome and Academic Burnout. The chapter summarized the identified gap in the literature related to Psychological Capital and Academic Burnout. Expressly, the relationship between Psychological Capital and Academic Burnout in university students is warranted for further study in countries outside of Iran (Rad et al., 2017). Thus, the purpose of this

study was to determine if, and to what extent, a statistically significant relationship exists between the composite and sub-composite categories of Psychological Capital and Academic Burnout in American post-graduate health science students.

This chapter presented the theoretical foundations of Psychological Capital and Academic Burnout, which serve as the guiding framework for this study. PsyCap involves a positive psychology foundation with four criteria serving as constructs of the theory: Hope, Efficacy, Resilience, and Optimism. The Hope construct includes empowered thinking (Snyder, 1994), and the Efficacy construct consists of the belief that one's attributes lead to success (Bandura, 1997). The Resilience construct involves successfully overcoming obstacles (Richardson et al., 1990; Richardson, 2002), while the Optimism construct consists of the belief that positive outcomes are likely (Seligman, 1998). Academic Burnout has a theoretical foundation anchored in burnout syndrome with three major sub-components termed Exhaustion, Cynicism, and Competence (Schaufeli et al., 2002). The findings of this study deepen the theoretical underpinnings of both PsyCap and Academic Burnout by examining if, and to what extent, the composite and sub-composite categories of Psychological Capital predict Academic Burnout in American post-graduate health science students at a university in the Southeastern United States.

Additionally, a comprehensive literature review identified several thematic elements, including (a) overview of Academic Burnout, (b) overview of Psychological Capital (PsyCap), (c) literature related to sub-variable: "Hope", (d) literature related to sub-variable: "Efficacy", (e) literature related to sub-variable: "Resilience", (f) literature related to sub-variable: "Optimism", (g) relationship between burnout and health

professions, (h) relationship between burnout and success outcomes, (i) relationship between PsyCap and success outcomes, (j) relationship between burnout and leadership, (k) relationship between PsyCap and leadership, (l) relationship between PsyCap and Academic Burnout, and (m) methodology and instrumentation. The identified gap in the literature, theoretical foundations of the study, as well as the thematic elements of the literature review, serve as the underpinning for the alignment of Chapter 3 of the dissertation. Chapter 3 will provide a detailed discussion of the methodology, design, associated research questions, instrumentation, and the population of the study.

Chapter 3: Methodology

Introduction

The purpose of this quantitative correlational study using multiple linear regression analysis was to examine if, or to what extent, the composite and sub-categorical levels of Psychological Capital predict Academic Burnout in post-graduate health science students in the Southeastern United States. Previous empirical research has established a predictive relationship between PsyCap and Academic Burnout in post-graduate medical students in the country of Iran (Rad et al., 2017). Further examination of the relationship between PsyCap and Academic Burnout in students outside the country of Iran is recommended (Rad et al., 2017). Thus, a gap exists as to the predictive relationship of PsyCap and Academic Burnout in students specific to the United States. Based on this gap in the literature, this study investigated whether PsyCap and its constructs of Hope, Efficacy, Resilience, and Optimism, predict Academic Burnout in American post-graduate health science students.

The findings of this study contribute to current research by directly addressing the gap and extending the understanding of the predictive relationship of PsyCap with Academic Burnout in American post-graduate health science students. This study further deepens the knowledge base of the theoretical underpinning of Psychological Capital by examining the relationship between Academic Burnout and each of the sub-variable constructs that characterize PsyCap, which include Hope, Efficacy, Resilience, and Optimism (Luthans, Youssef, & Avolio, 2007). This study also adds value to students attending post-graduate programs in the United States by determining whether a predictive relationship exists between the constructs of PsyCap and Academic Burnout in

an environment that directly relates to these students. Another implication of this study may be that the findings promote future research that examines whether interventions pertaining to PsyCap development could protect students from experiencing Academic Burnout. Additionally, the results may influence higher education leaders and administrators in policymaking designed to reduce the potential for students to experience Academic Burnout. Finally, researching whether a predictive relationship exists between PsyCap and its constructs and Academic Burnout may have practical implications for post-graduate faculty and administrators with regards to student advising and mentorship practices targeted at preventing the negative consequences of Academic Burnout among students.

Chapter 3 will focus on the quantitative research method and correlational research design to examine the predictive relationship between PsyCap and Academic Burnout among post-graduate health science students in the United States. This chapter will provide a brief description of the problem, research questions and associated hypotheses, and target population. Additionally, Chapter 3 will outline the sampling procedures, the instrumentation, and the data collection and analysis procedures for this study. Finally, this chapter will detail the validity, reliability, ethical considerations, and potential limitations associated with this study.

Statement of the Problem

It was not known if, or to what extent, a predictive relationship exists between the composite and sub-categorical levels of Psychological Capital and Academic Burnout in American post-graduate students. Academic Burnout is prevalent among university students. For example, Santen et al. (2010) conducted a quantitative correlational study

examining the prevalence of Academic Burnout in a sample of 249 medical students. Santen et al. found that 21% of first-year students, over 40% of second- and third-year students, and 31% of fourth-year students experienced a moderate or high degree of Academic Burnout in medical school. In addition to significant prevalence, Academic Burnout has been found to have negative consequences. These consequences include decreased student engagement (Schaufeli et al., 2002), lower academic performance, reduced student motivation, and incivility in the classroom (Rad et al., 2015). Further, Academic Burnout typically causes a state of exhaustion associated with the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008). Therefore, Academic Burnout is a significant societal problem owing to the prevalence and associated negative consequences.

Thus, it is essential to conduct research that examines constructs that may reduce the potential for students to experience the negative consequences of Academic Burnout. Previous research has indicated that a negative relationship exists between Psychological Capital and Academic Burnout (Rad et al., 2017). However, these findings are limited in generalizability outside of the Iranian student population (Rad et al., 2017). Thus, Rad et al. recommended further study of the relationship between PsyCap and Academic Burnout in university students outside the country of Iran. Subsequently, the purpose of this study was to examine if, or to what extent, PsyCap predicts Academic Burnout in American post-graduate students.

Research Questions and/or Hypotheses

As previously discussed, Academic Burnout involves a state of depleted energy, pessimism, and low personal accomplishment. Academic Burnout is associated with

adverse consequences for students, including exhaustion related to the demands of school work, a cynical and detached attitude toward school, and feelings of inadequacy and inefficacy as a student (Salmela-Aro et al., 2008). Grounding this study is the theoretical underpinning of Academic Burnout, which is characterized by Exhaustion, Cynicism, and Competence constructs (Schaufeli et al., 2002). Further framing this study is the theoretical background of Psychological Capital (PsyCap), which is grounded in positive psychology and is characterized by Hope, Efficacy, Resilience, and Optimism (Luthans, Youssef, & Avolio, 2007).

Data collection included two sources of data in this quantitative correlational study. The Psychological Capital Questionnaire (PCQ-24) was used to measure Psychological Capital, and the Maslach Burnout Inventory-Student Survey (MBI-SS) was utilized to measure Academic Burnout. Conceptually, Psychological Capital (PsyCap) derives from a theoretical foundation grounded in positive psychology theory characterized by Hope, Efficacy, Resilience, and Optimism constructs (Luthans, Youssef, & Avolio, 2007, p. 3). A positive motivational state that intentional goal-directed energy (agency) and its associated pathways will lead to accomplishing established goals is the conceptual definition of Hope (Snyder et al., 1991, p. 287). For Efficacy, the conceptual definition derived from Bandura (1997, p. 3), who defined it as the perceived belief that one's capabilities directly lead to the successful planning and completion of a specific course of action. The personal assets or resources that predict positive adaptation and success in the face of significant adversity is the conceptual definition of Resilience (Masten, 2001). Finally, the conceptual definition of Optimism is the belief

acknowledging that positive outcomes and events are realistic based on evaluations of internal and external attributions (Seligman, 1998; Seligman & Csikszentmihalyi, 2000).

For this study, the operational definition of PsyCap and the associated four constructs of Hope, Efficacy, Resilience, and Optimism refers to the aptitude level obtained from sampled post-graduate health science students from a university in the Southeastern United States as measured by the PCQ-24. The PCQ-24 is comprised of 24 questions to measure PsyCap (refer to Appendix D) with six questions related to each of the sub-group categories, including Hope, Efficacy, Resilience, and Optimism (Luthans et al., 2010; Luthans, Avolio, Avey, & Norman, 2007). The responses generate ratings on a 6-point Likert-type scale that yields an ordinal level of statistical measurement with a total composite score of a maximum of 144 and a minimum of 24. Each sub-category on the PCQ-24 yields a maximum score of 36 and a minimum score of 6 (refer to Appendix D).

Conceptually, Academic Burnout derives from the three-construct model of Exhaustion, Cynicism, and Competence in students within an educational setting (Schaufeli et al., 2002). For this study, the operational definition of Academic Burnout and the associated three constructs of Exhaustion, Cynicism, and Competence refers to the severity level obtained from sampled post-graduate health science students from a university in the Southeastern United States as measured by the Maslach Burnout Inventory-Student Survey (MBI-SS). The MBI-SS includes 16 total questions to measure Academic Burnout (refer to Appendix D), with 6 questions specific to the sub-category of Competence (maximum score of 36 and minimum score of 0), and 5 questions each specific to the Exhaustion and Cynicism sub-categories (maximum score of 30 and a

minimum score of 0). The items on the MBI-SS are scored on a frequency scale ranging from 0 (never) to 6 (always) and yields an ordinal level of statistical measurement with a total composite score of a maximum of 96 and a minimum of 0 (refer to Appendix D) (Schaufeli et al., 2002).

As previously mentioned, both the PCQ-24 and the MBI-SS use Likert scale items yielding an ordinal level of measurement. However, for this study, the Likert scale ratings were approximated to continuous (interval) data to meet the assumptions of multiple linear regression analysis pertaining to the use of continuous criterion and predictor variables. The use of Likert scale items as continuous (interval) data have been previously established and accepted in literature related to the MBI-SS and the PCQ-24 (Bernstein & Volpe, 2016; Bikar et al., 2018; Ding et al., 2015; Kristanto et al., 2016; Rad et al., 2017; Wang et al., 2017). Consenting participants completed the PCQ-24 and MBI-SS along with a survey requesting general demographic information, such as age, gender, marital status, program and level of experience (time enrolled in a post-graduate program). This information was used to establish a demographic profile of the sample participants and was not intended to serve as covariates for this particular study. To fully understand whether a predictive relationship exists between PsyCap and its associated constructs and Academic Burnout, establishing appropriate research questions were of vital importance. The research question and associated hypotheses directly relate to the problem statement by examining the predictive relationship between PsyCap and Academic Burnout, including each of the sub-variable components of PsyCap (Hope, Efficacy, Resilience, and Optimism) with Academic Burnout. The following research question and hypotheses served as a guide for this study:

RQ1: Does Psychological Capital (PsyCap) and its associated constructs of (a) Hope, (b) Efficacy, (c) Resilience, and (d) Optimism, predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS)?

$H_0$1: The composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_1: The composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$2: The Hope sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_2: The Hope sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$3: The Efficacy sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health

science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_3: The Efficacy sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$4: The Resilience sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_4: The Resilience sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$5: The Optimism sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_5: The Optimism sub-composite score Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

Research Methodology

This study implemented a quantitative methodology to examine whether PsyCap is a predictor of Academic Burnout in American post-graduate health science students. A quantitative research methodology is beneficial for predicting social phenomena in a controlled setting to facilitate justification, or the replication of predictable explanations (Park & Park, 2016). A quantitative methodology commonly includes objective measurements in the testing and examination of theories, variables, and hypotheses (Fraenkel et al., 2015). A quantitative methodology usually involves the statistical analysis of a sample of individuals that generate numerical results, which can often be generalized to a larger population (Fraenkel et al., 2015). This study investigated the potential predictive relationship of PsyCap and Academic Burnout in American post-graduate health science students. The purpose of this study aligned with the scope of justification as defined by Park and Park (2016). Thus, the quantitative methodology was the most appropriate selection based on the research question and associated hypotheses for this study.

Previous research has utilized the quantitative methodology related to the variables of Psychological Capital and burnout syndrome. For example, Guo et al. (2015) implemented a quantitative methodology to examine the relationship between multiple factors, including PsyCap, with burnout syndrome in steelworkers in China. Additionally, Wang et al. (2017) used a quantitative methodology to explore the relationship between PsyCap and burnout syndrome in factory workers in China. Finally, Rad et al. (2017) employed a quantitative methodology to examine the relationship between PsyCap and Academic Burnout in Iranian university students. Therefore, the use of the quantitative

methodology in previous literature provides further support that the quantitative methodology was the most appropriate selection for this study.

Conversely, this study could not implement a qualitative methodology to examine whether PsyCap is a predictor of Academic Burnout in American post-graduate health science students. The qualitative research methodology is beneficial to explore the descriptive accounts of social phenomena in a natural setting to facilitate discovery, or the formation of concepts and hypotheses (Park & Park, 2016). A qualitative methodology commonly provides explanatory descriptions and detailed accounts as to why relationships exist, rather than present validation as to whether or not a connection exists (Fraenkel et al., 2015). This study examined the potential predictive relationship of PsyCap and Academic Burnout in American post-graduate health science students. Therefore, the qualitative methodology was inappropriate for this study based on the research question and associated hypotheses.

Research Design

Previous empirical research has utilized a correlational design to examine the predictive relationship between Psychological Capital and Academic Burnout. Rad et al. (2017) conducted a study investigating the prediction between the variable Psychological Capital, and the variables of Academic Burnout and its associated constructs of Exhaustion, Cynicism, and Inefficacy. Rad et al. conducted a multiple regression analysis and found a significant predictive relationship between Academic Burnout and PsyCap. The findings indicated that as Psychological Capital increases, the risk of Academic Burnout, Exhaustion, and Cynicism decreases, while Inefficacy increases.

A correlational design was ideal for the design of this specific study. A correlational design is typically used to investigate the potential relationship between predictor and criterion variables (Lund Research Ltd., 2018). The correlation design commonly allows the researcher to draw from the results of the study as to whether the variables are unrelated, positively related, or negatively related (Lund Research Ltd., 2018). Further, multiple linear regression analysis allows researchers to examine the relationship between a criterion variable with two or more predictor variables (Fraenkel et al., 2015; Portney & Watkins, 2009). This study utilized the following variable structure:

- Predictor variable: PsyCap and the four associated constructs of Hope, Efficacy, Resilience, and Optimism, as measured by the Psychological Capital Questionnaire (PCQ-24).
- Criterion variable: Academic Burnout, as measured by the Maslach Burnout Inventory-Student Survey (MBI-SS).

Additionally, this study sampled post-graduate health science students from a university in the Southeastern United States as the units of observation and the units of analysis. Since this study investigated whether PsyCap and its four associated constructs are predictor variables of Academic Burnout, a correlational design with multiple linear regression analysis was the most appropriate selection based on the research question and associated hypotheses.

Previous research utilized a correlational design to examine the relationship between PsyCap and burnout syndrome. For example, Guo et al. (2015) used a correlational design to examine the relationship between multiple factors, including PsyCap, with burnout syndrome in steelworkers in China. Additionally, Wang et al. (2017) implemented a correlational design to explore the relationship between PsyCap

and burnout syndrome in factory workers in China. Finally, Arrogante and Aparicio-Zaldivar (2017) conducted a quantitative correlational study of the mediational role of Resilience with health and burnout syndrome in a sample of 52 critical care professionals from an intensive care unit in Madrid, Spain. Therefore, the use of the correlational design in previous literature provides further support that the correlational design was the most appropriate selection for this study.

The researcher considered using other types of quantitative research designs for this study, including true experimental, quasi-experimental, and causal-comparative. In a true experimental design, the researcher typically manipulates the independent variable, incorporates elements of control, and randomly assigns participants into different comparison groups (Portney & Watkins, 2009). The researcher for this study did not implement randomized assignment into comparison groups, nor manipulate the independent variable. Therefore, the researcher could not select a true experimental design for this study. Consequently, a cause-and-effect relationship in this study cannot be established (Portney & Watkins, 2009). A quasi-experimental design also could not be utilized in this study as a quasi-experimental design typically incorporates manipulation of the independent variable, commonly through a type of intervention or treatment (Portney & Watkins, 2009). Finally, when a researcher is attempting to determine the reasons for individual and group differences, a causal-comparative design is frequently implemented (Fraenkel et al., 2015). Additionally, while both correlational and causal-comparative designs incorporate ex post facto data, the causal-comparative design consists of a nominal independent variable (Fraenkel et al., 2015; Portney & Watkins, 2009). As this study investigated the relationship between scalar predictor and criterion

variables, a causal-comparative design was not appropriate based on the research question and associated hypotheses.

Population and Sample Selection

The setting for this study involved a private, small liberal arts University located in the Southeastern United States. The University has an undergraduate student population of roughly 2,100, and about 1000 graduate students actively enrolled. The general population for the study involved post-graduate students in the United States education system while the population of interest for this study included actively enrolled students in graduate studies within the University. The target population for the study involved 627 actively enrolled students in post-graduate studies within the University's College of Health Sciences. The College of Health Sciences has several areas of study, including Doctor of Physical Therapy, Doctor of Medical Sciences, Master of Public Health, Master of Science in Athletic Training, and Master of Science in Nursing.

Quantitative sample size. A minimum of 85 participants from the target population was needed based on a power of 0.80 ($\beta = 0.80$), a significance level of 0.05 ($\alpha = 0.05$), and an effect size of 0.15 ($\rho = 0.15$), which is summarized in Appendix E. A total of 96 participants was achieved in this study, above the required minimum set by the a priori analysis. The researcher requested and obtained site authorization through the Institutional Review Board (IRB) approval at the University for permission to sample graduate students for the study. Additionally, the researcher received approval from the Grand Canyon University IRB. Following site authorization and IRB approval, the researcher worked with the University's Registrar Department to have an administrative

representative of the College of Health Sciences send invitations to post-graduate students of the College of Health Sciences requesting participation in the study.

The researcher implemented a convenience sampling of the target population and was blinded for this study. Convenience sampling implements the study of a group of individuals that are readily available and volunteer to participate (Fraenkel et al., 2015). Convenience sampling identifies study participants who fit the criteria of the study, is more time efficient, less cost-prohibitive, and less cumbersome than utilizing probability sampling (Emerson, 2015). Thus, convenience sampling was the most appropriate for the nature of the study due to restrictions in time, finances, and the availability and access to the study participants. However, convenience sampling reduces the generalizability of the findings as the sample participants may not be representative of the general population. The participants of the study completed the Psychological Capital Questionnaire (PCQ-24) to measure Psychological Capital and the Maslach Burnout Inventory-Student Survey (MBI-SS) to measure Academic Burnout as part of a survey on Google Forms. Demographic information, such as age, gender, marital status, program and level of experience (time enrolled in a post-graduate program), was obtained from the survey on Google Forms with permission from study participants.

Instrumentation

This quantitative correlational study used two primary sources of data. Both sources of data have been previously used to measure Psychological Capital and Academic Burnout in other empirical studies. In a study by Rad et al. (2017), the Psychological Capital Questionnaire (PCQ-24) was utilized to measure Psychological Capital. The PCQ-24 was selected for this study because it is a valid and reliable

instrument to measure Psychological Capital (Luthans, Avolio, Avey, & Norman, 2007). In a study by Schaufeli et al. (2002), the Maslach Burnout Inventory-Student Survey (MBI-SS) was utilized to measure Academic burnout. The MBI-SS was selected for this study because it is a valid and reliable instrument in the measurement of Academic Burnout (Schaufeli et al., 2002; Shi et al., 2019; Yavuz & Dogan, 2014). The next two sections will discuss the PCQ-24 and the Maslach Burnout Inventory-Student Survey (MBI-SS) in further detail.

Psychological Capital Questionnaire (PCQ-24). The PCQ-24 is the primary instrument used to measure the variable of Psychological Capital. The PCQ-24 is a 24-item questionnaire that incorporates six questions related to each of the sub-group categories, including Hope, Efficacy, Resilience, and Optimism, which can be reviewed in Appendix D (Luthans et al., 2010; Luthans, Avolio, Avey, & Norman, 2007). Responses to the questions are rated on a 6-point Likert-type scale: (a) 1 = strongly disagree, (b) 2 = disagree, (c) 3 = somewhat disagree, (d) 4 = somewhat agree, (e) 5 = agree, and (f) 6 = strongly agree (Luthans et al., 2010; Luthans, Avolio, Avey, & Norman, 2007). The PCQ-24 yields an ordinal level of measurement, however, for this study, the Likert ratings from the PCQ-24 will be approximated to continuous and classified as such. Previous literature has widely accepted the approximation of the PCQ-24 Likert ratings from ordinal to continuous (Bernstein & Volpe, 2016; Ding et al., 2015; Rad et al., 2017; Wang et al., 2017). The PCQ-24 produces a total composite score of a maximum of 144 and a minimum of 24. The PCQ-24 also yields a maximum score of 36 and a minimum score of 6 for each of the sub-group categories.

Maslach Burnout Inventory-Student Survey (MBI-SS). The MBI-SS is the primary instrument that was used to measure the criterion variable of Academic Burnout. The MBI-SS covers three sub-group categories of Academic Burnout, labeled Exhaustion, Cynicism, and Competence. The MBI-SS consists of a total of sixteen items, of which six questions are specific to the Competence sub-group, and 5 questions each are specific to the Exhaustion and Cynicism sub-groups, which can be reviewed in Appendix D. The ratings on the MBI-SS are scored on a frequency scale ranging from 0 (never) to 6 (always) (Schaufeli et al., 2002). The MBI-SS yields an ordinal level of measurement, however, for this study, the Likert ratings from the MBI-SS will be approximated to continuous and classified as such. Previous literature has widely accepted the approximation of the MBI-SS Likert ratings from ordinal to continuous (Bikar et al., 2018; Kristanto et al., 2016; Rad et al., 2017; Wang et al., 2017). The MBI-SS produces a total composite score of a maximum of 96 and a minimum of 0, in which higher ratings indicate a greater risk of Academic Burnout (Schaufeli et al., 2002). Additionally, demographic information, such as age, gender, marital status, the program of study, and level of experience (length of time enrolled in the program), was obtained by self-report with permission from study participants.

Validity

As previously discussed, the PCQ-24 instrument was used to measure PsyCap for this study. The PCQ-24 was selected for this study because it is a valid instrument to measure Psychological Capital (Luthans, Avolio, Avey, & Norman, 2007). For example, Luthans, Avolio, Avey, & Norman (2007) tested for the discriminant validity of the PCQ-24 and found that PsyCap was not related to age demographics, education demographics,

or personality dimensions of Agreeableness or Openness. Further, Luthans, Avolio, Avey, & Norman (2007) examined the convergent validity of the PCQ-24 and found a strong positive relationship between PsyCap and core self-evaluations (.60), and a moderate positive association between PsyCap and Extraversion (.36) and Conscientiousness (.39). Luthans, Avolio, Avey, & Norman (2007) also tested for the criterion validity of the PCQ-24 and found that PsyCap had a significantly stronger relationship to job satisfaction than Conscientiousness and Extraversion ($p < .001$). Also, PsyCap was found to be more correlated to effective organizational commitment ($p < .001$) than core self-evaluations, Conscientiousness, and Extraversion (Luthans, Avolio, Avey, & Norman, 2007). In other words, the PCQ-24 was found to have discriminant, convergent, and criterion validity in the measurement of Psychological Capital.

Further studies have affirmed the validity of the PCQ-24 instrument in the measurement of PsyCap. For example, Görgens-Ekermans and Herbert (2013) conducted a study to examine the construct validity, discriminant validity, and external validity of the PCQ-24 instrument in a sample of workers in South Africa. The authors sampled 209 employees of a construction company in South Africa completed a demographic survey, the Copenhagen Burnout Inventory (CBI), the Perceived Stress Scale (PSS), the shortened Utrecht Work Engagement Scale (UWES-9) and the PCQ-24 (Görgens-Ekermans & Herbert, 2013). The researchers compared the four-factor model of the PCQ-24 to a one-factor model using confirmatory factor analysis (CFA) statistical analysis to examine the construct validity of the PCQ-24 instrument (Görgens-Ekermans & Herbert, 2013). The results showed a good fit for the four-factor model (multivariate normality skewness and kurtosis: $\chi 2 = 1830.302$; $p < 0.000$) in comparison to the one-

factor model ($\chi 2 = 79.79$, $p < 0.05$). Additionally, the researchers conducted a Satorra-Bentler chi-square, a comparative fit index (CFI), a non-normed fit index (NNFI), a root mean square error of approximation (RMSEA), and a standardized root mean square residual (SRMR) to further evaluate the CFA model for construct validity (Görgens-Ekermans & Herbert, 2013). The authors found a Satorra Bentler chi-square of 323.68, with 246 degrees of freedom and $p < 0.000$. The researchers also found CFI and NNFI results of 0.95, with an SRMR of ≤ 0.08 and an RMSEA < 0.08. Thus, the results of the study indicate evidence to support the construct validity of the PCQ-24 instrument.

The researchers also tested for the discriminant validity of the PCQ-24. The authors used a series of CFA models to check whether the four sub-dimensions of the PCQ-24 were distinct from one another (Görgens-Ekermans & Herbert, 2013). Further, the authors examined the magnitude of difference in the Pearson correlations between the PCQ-24 sub-dimensions (Görgens-Ekermans & Herbert, 2013). The authors found that the confirmatory factor analysis and magnitude difference in the Pearson correlations supported the discriminant validity of each of the four sub-dimensions of the PCQ-24 instrument (Görgens-Ekermans & Herbert, 2013). Therefore, while the four sub-dimensions of the PCQ-24 are related, the constructs are separate and distinct from each other (Görgens-Ekermans & Herbert, 2013). Finally, external validity was examined through the use of a moderated multiple regression statistical analysis to determine whether PsyCap acts as a moderator in the occupational stress and burnout relationship (Görgens-Ekermans & Herbert, 2013). The results support that PsyCap serves as a moderator in the relationship between occupational stress and burnout syndrome in South African construction company employees (Görgens-Ekermans & Herbert, 2013). In

summary, the PCQ-24 has been studied and verified to be a valid instrument in the measurement of Psychological Capital.

As previously discussed, the MBI-SS was used to measure the criterion variable of Academic Burnout for this study. The MBI-SS was selected for this study because it is a valid instrument in the measurement of Academic Burnout (Schaufeli et al., 2002; Shi et al., 2019; Yavuz & Dogan, 2014). For example, Schaufeli et al. (2002) conducted a cross-national study of 1,661 undergraduate university students in Spain, Portugal, and the Netherlands utilizing a self-report questionnaire related to burnout, engagement, and academic performance. Schaufeli et al. (2002) implemented a confirmatory factor analysis of the MBI-SS, a modified version of the Maslach Burnout Inventory-General Survey, and found that the three-factor structure (Exhaustion, Cynicism, and Competence) was valid. Specifically, normal distribution and acceptable kurtosis were achieved, and the three-factor model of Exhaustion, Cynicism, and Competence fit well as demonstrated by CFI and RMSEA results greater than 0.90 and less than 0.08 respectively (Schaufeli et al., 2002). Thus, the results of this study support the construct validity of the MBI-SS.

Yavuz and Dogan (2014) examined the validity of the MBI-SS in a population of 9-12th-grade students in Turkey. The study included 1020 Turkish high school students in which the researchers administered the MBI-SS. Data analysis involved use of Confirmatory Factor Analysis (CFA) to examine the construct validity of the instrument. The results of the CFA revealed a CFI of 0.98 and an RMSE of 0.063, indicating good model fit of the MBI-SS and construct validity of the instrument (Yavuz & Dogan, 2014). Additionally, Shi et al. (2019) conducted a Rasch Analysis validation of the MBI-SS with

a sample of 787 first-year medical students enrolled at a large mid-western medical school. The findings revealed that the three constructs of the MBI-SS fit the model well, as demonstrated by positive item-Rasch measure correlations within the range of 0.5 to 1.5 (Shi et al., 2019). Thus, the results of the study indicate positive structural validity of the psychometric properties of the MBI-SS instrument (Shi et al., 2019). In summary, the MBI-SS has been studied and verified to be a valid instrument in the measurement of Academic Burnout.

Reliability

As stated previously, the PCQ-24 instrument was used to measure PsyCap for this study. The PCQ-24 was selected for this study because it is a reliable instrument to measure Psychological Capital (Luthans, Avolio, Avey, & Norman, 2007). Luthans, Avolio, Avey, & Norman (2007) conducted a study to measure reliability estimates from four different populations. Cronbach's alpha coefficient for internal consistency was conducted to determine the reliability of all four individual constructs of PsyCap, as well as PsyCap as an overall measure (Luthans, Avolio, Avey, & Norman, 2007). The findings for Hope (.72, .75, .80, .76), Efficacy (.75, .84, .85, .75), Resilience (.71, .71, .66, .72), and Optimism (.74, .69, .76, .79) all demonstrated strong support for the reliability of each construct of PsyCap (Luthans, Avolio, Avey, & Norman, 2007). Further, the findings revealed excellent reliability ratings for the overall measure of PsyCap (.88, .89, .89, .89) (Luthans, Avolio, Avey, & Norman, 2007). In other words, the PCQ-24 was found to have significant internal reliability in the measurement of Psychological Capital.

Additional studies have been conducted to examine the reliability of the PCQ-24. For example, Görgens-Ekermans and Herbert (2013) conducted a study to investigate the

reliability of the PCQ-24 instrument in a sample of 209 construction company employees in South Africa. The authors utilized a Cronbach's alpha coefficient statistical analysis to examine the internal consistency of the PCQ-24 instrument (Görgens-Ekermans & Herbert, 2013). The results indicate support that the PCQ-24 is a reliable instrument in the measurement of PsyCap (Görgens-Ekermans & Herbert, 2013). The researchers found Cronbach's alpha coefficient results of 0.83, 0.81, 0.69, and 0.67 for the Self-Efficacy, Hope, Resilience, and Optimism constructs, respectively (Görgens-Ekermans & Herbert, 2013). In summary, the PCQ-24 has been studied and verified to be a reliable instrument in the measurement of Psychological Capital.

In accordance with earlier statements, the MBI-SS was utilized to measure Academic Burnout in this study. The MBI-SS was selected for this study because it is a reliable instrument in the measurement of Academic Burnout (Yavuz & Dogan, 2014; Shi et al., 2019). For example, Yavuz and Dogan (2014) examined the reliability of the MBI-SS in a sample of 1020 Turkish 9-12th-grade high school students. Cronbach's alpha coefficient analysis was utilized to investigate the internal consistency of the MBI-SS, and the researchers found values of 0.838 for Exhaustion, 0.844 for Cynicism, and 0.875 for reduced efficacy (Competence) sub-group categories (Yavuz & Dogan, 2014). Similarly, Shi et al. (2019) examined the reliability of the MBI-SS in measuring Academic Burnout in a sample of 787 first-year medical students enrolled at a large mid-western medical school. The results revealed Cronbach's alpha coefficient values of internal consistency for all three sub-group categories around 0.8 (Shi et al., 2019). The results of these studies indicate strong reliability for the MBI-SS in the measurement of Academic Burnout.

Data Collection and Management

Researchers must utilize accurate and consistent data collection and management practices. Accurate and consistent data collection and management practices help to prevent conclusions drawn by the researcher from potential bias (Fraenkel et al., 2015). The data collection and management associated with this study consisted of a series of steps. First, the researcher obtained written approval from the authors or copyright holders of the Psychological Capital Questionnaire (PCQ-24) for use in data collection for the predictor variable of PsyCap. The researcher also obtained written approval from the authors or copyright holders of the Maslach Burnout Inventory-Student Survey (MBI-SS) for use in data collection for the criterion variable of Academic Burnout. Next, the researcher prepared the informed consent form, demographic survey, PCQ-24, and MBI-SS for participant completion.

The next step in the data collection and management process was to obtain written approval from the Grand Canyon University Institutional Review Board and the Institutional Review Board affiliated with the University of the sampled participants. The researcher then posted the prepared documents to Google Forms for completion. The researcher then contacted the Registrar Department associated with the University from which the target population is located and requested permission to sample graduate students within the College of Health Sciences. An administrative representative was assigned to the project and sent email invitations to the post-graduate students of the College of Health Sciences on behalf of the researcher. The email invitations from the administrative representative requested participation in the study and provided a link to the survey materials. The researcher implemented a convenience sampling of the target

population and was blinded for this study. Convenience sampling involves studying a group of individuals that are readily available and volunteer to participate (Fraenkel et al., 2015). Following three separate rounds of invitations sent by the administrative representative, a minimum sample size of 96 participants was achieved. The researcher then collected data from completed participant survey documents and prepared for data entry.

The researcher checked completed participant surveys for missing data and subsequently removed six participants from the sample with missing data. The researcher also obtained demographic information for each study participant and as a group at large via a feature of Google Forms. Participant results of the survey instruments were calculated following the instruction booklets detailing the scoring of the PCQ-24 and MBI-SS and then uploaded into Intellectus Statistics via an Excel spreadsheet. The researcher was careful not to request any specific identifier information in the survey materials to protect participant confidentiality. Once all collected data from completed participant surveys were uploaded into Intellectus Statistics, the researcher electronically stored the data in a password protected computer that only the researcher had access. Additionally, Intellectus Statistics is an online platform with password protection that stores uploaded data utilized for analysis, providing further protection of participant information. The researcher will subsequently destroy the collected data per research standards following three years of data storage.

Data Analysis Procedures

It was not known if, or to what extent, a predictive relationship exists between the composite and sub-categorical levels of Psychological Capital and Academic Burnout in

American post-graduate students. The following research question and hypotheses served as a guide for this study:

RQ1: Does Psychological Capital (PsyCap) and its associated constructs of (a) Hope, (b) Efficacy, (c) Resilience, and (d) Optimism, predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS)?

$H_0$1: The composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_1: The composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$2: The Hope sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_2: The Hope sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$3: The Efficacy sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_3: The Efficacy sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$4: The Resilience sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_4: The Resilience sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$5: The Optimism sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_5: The Optimism sub-composite score Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students

as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

The data analysis procedures associated with this study consisted of a series of steps. First, the researcher cleaned and organized the data by compiling the data from completed participant survey documents and entering the data into an Excel Spreadsheet for upload into Intellectus Statistics. Next, the researcher checked completed participant surveys for missing data. The researcher subsequently removed six participant responses from data analysis due to missing data. The data entered into an Excel Spreadsheet for upload into Intellectus Statistics from completed participant survey documents included: a) total composite score for the Maslach Burnout Inventory-Student Survey (MBI-SS), b) total composite score for the PCQ-24, and c) sub-composite scores for each of the constructs (Hope, Efficacy, Resilience, and Optimism) associated with the PCQ-24.

Next, the researcher justified data analysis techniques for simple linear regression and multiple linear regression analysis for the research question (see Table 2). Specifically, a correlational design is the best design to examine if, or to what extent, a relationship may exist between predictor and criterion variables, allowing the researcher to draw from the results of the study as to whether the variables are unrelated, positively related, or negatively related (Lund Research Ltd., 2018). Further, multiple linear regression analysis allows researchers to examine the relationship between a criterion variable with two or more predictor variables (Fraenkel et al., 2015; Portney & Watkins, 2009). Since this study investigated whether PsyCap and its four associated constructs are predictor variables of Academic Burnout, a correlational design with multiple linear

regression analysis was the most appropriate selection based on the research question and associated hypotheses.

Descriptive and Inferential Statistics

This study incorporated descriptive and inferential statistical analysis. A descriptive statistical analysis is used to describe trends or patterns in the data collected from the sample used in the study (Fraenkel et al., 2015). Descriptive statistical analysis for this study included mean and median measures of central tendency, as well as the use of standard deviation as a measure of spread. The descriptive statistical analysis for this study also presented participant background information, such as age, gender, marital status, area of study, and level of experience. Inferential statistical analysis is meant to make conclusions and generalizations of the findings to a larger population from the study's sample (Fraenkel et al., 2015). Inferential statistical analysis for this study included standard error of the mean and confidence intervals to estimate population parameters.

Additionally, the researcher conducted simple linear regression and multiple linear regression analysis to test the outlined study hypotheses. Linear regression analysis was conducted and involved a series of steps. First, the researcher tested assumptions associated with simple linear regression and multiple linear regression analysis (Lund Research Ltd., 2018). The next section will provide a detailed discussion of the assumptions related to simple linear regression and multiple linear regression analysis. Second, the researcher determined how well the regression models fit the data (Lund Research Ltd., 2018). Next, the researcher inspected the estimated model coefficients and tested for the statistical significance of each predictor variable (Lund Research Ltd.,

2018). The coefficient of multiple correlation (R) was used to assess the strength of the association between predictor variables and the criterion variable (Fraenkel et al., 2015). Additionally, the coefficient of determination (R^2) was used to indicate the percentage of the variability among criterion scores that is predictable based on the scores on the predictor variables of study (Fraenkel et al., 2015). Finally, the researcher documented and reported the findings (Lund Research Ltd., 2018). In summary, this study incorporated data analysis techniques that included descriptive statistics, inferential statistics, simple linear regression, and multiple linear regression analysis.

Assumptions

The researcher utilized simple linear regression and multiple linear regression analysis to investigate the research question in this study. The researcher tested for the satisfaction of all associated assumptions for simple linear regression analysis, which include: (a) use of a continuous criterion variable satisfied by previous research using Maslach Burnout Inventory-Student Survey (MBI-SS) Likert scale data as a continuous label (Bikar et al., 2018; Kristanto et al., 2016; Rad et al., 2017; Wang et al., 2017), (b) the use of one predictor variable that is continuous or categorical, which is satisfied by previous research using PCQ-24 Likert scale data as a continuous label (Bernstein & Volpe, 2016; Ding et al., 2015; Rad et al., 2017; Wang et al., 2017); (c) variables are normally distributed, which was verified by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution (Q-Q scatterplot), (d) a linear relationship must exist between criterion and predictor variables, which was assessed by visual inspection of data on a scatterplot, (e) independence of errors must exist, which was evaluated by checking the Durbin-Watson statistic, (f) homoscedasticity of residuals

must exist by ruling out heteroscedasticity, which was assessed by plotting the studentized residuals against the unstandardized predicted (fitted) values, (g) no significant outlier or influential points, which was assessed by plotting the absolute values of the studentized residuals against the observation numbers (Lund Research Ltd., 2018; Williams, Grajales, & Kurkiewicz, 2013).

The researcher tested for the satisfaction of all associated assumptions for multiple linear regression analysis, which include: (a) use of a continuous criterion variable satisfied by previous research using Maslach Burnout Inventory-Student Survey (MBI-SS) Likert scale data as a continuous label (Bikar et al., 2018; Kristanto et al., 2016; Rad et al., 2017; Wang et al., 2017), (b) the use of two or more predictor variables that are continuous or categorical, which is satisfied by previous research using PCQ-24 Likert scale data as a continuous label (Bernstein & Volpe, 2016; Ding et al., 2015; Rad et al., 2017; Wang et al., 2017); (c) variables are normally distributed, which was verified by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution (Q-Q scatterplot), (d) a linear relationship must exist between criterion and predictor variables, which was assessed by visual inspection of data on a scatterplot, (e) independence of errors must exist, which was assessed by checking the Durbin-Watson statistic, (f) homoscedasticity of residuals must exist by ruling out heteroscedasticity, which was assessed by plotting the studentized residuals against the unstandardized predicted (fitted) values, (g) the data must not show multicollinearity, which was evaluated through variance inflation factors (VIFs) between predictors, (h) no significant outlier or influential points, which was evaluated by plotting the absolute values of the studentized residuals against the observation numbers (Lund Research Ltd., 2018;

Williams et al., 2013). If the assumptions outlined for simple linear regression and multiple linear regression analysis are not satisfied in this study, the researcher will employ a non-parametric test for the research question and associated hypotheses.

Table 2.

Summary of Variables and Statistical Tests Used to Evaluate RQ1

Hypothesis	Predictor Variable	Criterion Variable	Analysis
H_1	Composite PsyCap	Composite Academic Burnout	Simple Linear Regression
H_2	Sub-composite PsyCap category: Hope	Composite Academic Burnout	Multiple Linear Regression
H_3	Sub-composite PsyCap category: Efficacy	Composite Academic Burnout	Multiple Linear Regression
H_4	Sub-composite PsyCap category: Resilience	Composite Academic Burnout	Multiple Linear Regression
H_5	Sub-composite PsyCap category: Optimism	Composite Academic Burnout	Multiple Linear Regression

Ethical Considerations

Ethical considerations involve the standards of conduct that govern acceptable research practices. Significant considerations relevant to conducting ethical research include conforming to the standards of conduct of research with human subjects as outlined by the research community and Belmont Principles (Fraenkel et al., 2015). Important ethical considerations in research with human subjects involve protecting study participants from harm, beneficence, and ensuring privacy and confidentiality of research data (Fraenkel et al., 2015). Specific to this study, the researcher strictly adhered to ethical standards of conduct and the Belmont Principles in several ways.

First, the researcher ensured protection from harm by obtaining informed consent from study participants. The informed consent process educated all study participants of the purpose of the study, their potential role, any potential risks and benefits of voluntarily participating in the study, and that all participants had the option to dismiss themselves from the study at any time. Secondly, the researcher demonstrated beneficence and judgment by ensuring that the information the participants provided would not result in any form of solicitation or advertising/marketing purpose. Further, the researcher obtained approval from the Institutional Review Board (IRB) from the University associated with the target population as well as the IRB from Grand Canyon University.

Lastly, the researcher ensured the privacy and confidentiality of all study participants. All methods to safeguard and protect the privacy and confidentiality of research participants of the study were adhered to as outlined by the Grand Canyon University IRB and the IRB associated with the site for the study. The researcher obtained written consent to administer the PCQ- 24 and the MBI-SS from the authors of the instruments and received informed consent from participants of the study. Finally, the researcher will electronically store completed Google Forms results through a password protected computer that only the researcher has access. Additionally, the data uploaded into the on-line Intellectus Statistics platform is further password protected to gain access to the site. The files will be stored for three years, and then the researcher will subsequently destroy the data in accordance with research standards.

Limitations and Delimitations

There were several apparent limitations and delimitations associated with this study. Limitations are potential weaknesses, problems, or biases within the research study that the researcher self-identifies (Ellis & Levy, 2009). One limitation associated with this study is that the findings may not generalize to all post-graduate, undergraduate, or secondary school students as the target population involved post-graduate health science students at a university in the Southeastern region of the United States. Additionally, the findings may not generalize to other geographical areas of the United States as the target population involved post-graduate students at a university in the Southeastern region of the United States. Further, the use of convenience sampling reduced the representativeness of the population, thereby decreasing the generalizability of the results (Fraenkel et al., 2015). Another limitation associated with this study was the use of a correlational design, which does not allow the researcher to establish cause and effect conclusions from the results of the study (Portney & Watkins, 2009). Finally, a limitation associated with this study is that multiple linear regression analysis did not allow the researcher to draw conclusions related to cause and effect (Lund Research Ltd., 2018). In summary, limitations associated with this study included the potential for lack of generalizability and an inability to draw cause and effect conclusions.

As previously stated, there were several anticipated delimitations associated with this study. Delimitations refer to things the researcher did not intend to do to establish boundaries for the research study (Ellis & Levy, 2009). One delimitation associated with this study involved the target population involving post-graduate students only, excluding those students pursuing an undergraduate education. The target population also included

student participants from the College of Health Sciences, excluding those students pursuing post-graduate education in other disciplines, such as business or social sciences. Further, the target population involved post-graduate students from a university in the Southeastern region of the United States, excluding those students pursuing post-graduate education from Universities in other regions of the United States. Additionally, longitudinal study design may have yielded different or similar results. The longitudinal design typically requires data collection from study participants at multiple different points in time to study changes over time (Fraenkel et al., 2015; Portney & Watkins, 2009). However, this study was delimited to a cross-sectional design in the 2018-2019 academic year. In summary, significant delimitations associated with this study included the potential for lack of generalizability based on exclusion criteria of the target population and the use of a cross-sectional design.

There are several strategies associated with the design of this study that may have worked to minimize the limitations and delimitations related to this study, including the potential for lack of generalizability, lack of causality and use of a cross-sectional design. First, the sampling of a population that included post-graduate students from multiple disciplines and majors (physical therapy, nursing, athletic training, physician assistant, etc…), as well as numerous degree levels (masters and doctorate), may have led to a more diverse and representative sample of post-graduate higher education. The more representative the sample is, the higher the level of generalizability of the findings to the population of interest (Fraenkel et al., 2015). In summary, the researcher may mitigate the limited generalizability in this study by implementing sampling from a diverse population of post-graduate disciplines, majors, and degree levels.

Second, this study implemented a predictive correlation design with multiple linear regression analysis, which may have reduced the potential lack of causality limitation associated with the study. Predictive correlational studies involve stronger statistical analysis that enables a researcher to determine if a relationship of sufficient magnitude exists between variables such that the score on one variable may predict the score on another variable (Fraenkel et al., 2015). While determining causality is not the aim of predictive correlational studies, the researcher is better able to predict a behavior or response based on the relationship of the behavior to other variables (Portney & Watkins, 2009). Thus, predictive studies may better position the researcher for practical decision making and developing hypothetical interventions for future study (Portney & Watkins, 2009). Therefore, a lack of causality associated with this study was somewhat mitigated by the implementation of a predictive correlation design with multiple linear regression analysis. The predictive correlational design may potentially allow the researcher to draw predictive conclusions among study variables (Portney & Watkins, 2009).

Third, the use of a cross-sectional design does not typically allow a researcher to understand long-term effects or changes with time. This consequence is due to the nature of cross-sectional research, in which sampling of participants occurs at one relatively specific point in time (Fraenkel et al., 2015; Portney & Watkins, 2009). Thus, it is difficult for a researcher to determine if the results of a cross-sectional study will yield similar results as a longitudinal study design. However, there are a couple of benefits of implementing a cross-sectional design in this study that may have mitigated the lack of ability of the researcher to understand changes over time. First, the cross-sectional

approach was much more efficient, as the researcher could study participants at one specific point in time. Second, the use of a cross-sectional design may have reduced the threat of history effects and respondent fatigue as the sample participants are only tested once (Fraenkel et al., 2015; Portney & Watkins, 2009). In summary, the negative consequences of utilizing a cross-sectional design may have been mitigated in this study by the benefits of using a cross-sectional design, which includes research efficiency, reduced history effects, and decreased respondent fatigue.

Summary

In summary, Chapter 3 re-stated the purpose of the study, the problem statement, and the associated research question and hypotheses. Specifically, it was not known if, and to what extent, a significant predictive relationship exists between the composite and sub-categorical levels of Psychological Capital and Academic Burnout in American post-graduate students. The target population for this study included active students enrolled in post-graduate studies within the College of Health Sciences at a university in the Southeastern United States. A total of 96 participants from the target population was achieved in this study, which was above the minimum of 85 participants required based on a power of 0.80 ($\beta = 0.80$), a significance level of 0.05 ($\alpha = 0.05$), and an effect size of 0.15 ($\rho = 0.15$), which is summarized in Appendix E. Similar studies have utilized a quantitative methodology and a correlational design to examine the relationship between PsyCap and burnout syndrome (Guo et al., 2015; Rad et al., 2017; Wang et al., 2017). The quantitative methodology with a correlational design was the most appropriate selection for this study based on the associated research question, hypotheses, and previous selection in the current literature.

Two sources of data were present in this quantitative correlational study. The Psychological Capital Questionnaire (PCQ-24) was used to measure Psychological Capital, and the Maslach Burnout Inventory-Student Survey (MBI-SS) was utilized to measure Academic Burnout. The PCQ-24 is a valid and reliable instrument to measure Psychological Capital (Görgens-Ekermans & Herbert, 2013; Luthans, Avolio, Avey, & Norman, 2007). Additionally, the MBI-SS is a valid and reliable instrument in the measurement of Academic Burnout (Schaufeli et al., 2002; Shi et al., 2019; Yavuz & Dogan, 2014). The researcher obtained additional information (age, gender, marital status, program, and level of experience) with permission to establish a demographic profile of study participants.

Chapter 3 also outlined the sequence of steps regarding the data collection and management process, as well as the data analysis process associated with this study. This chapter also described important ethical considerations, including protecting the rights and privacy of all study participants, obtaining written approval from the Institutional Review Board (IRB) from the University associated with the target population as well as the IRB from Grand Canyon University. Further, the researcher will store completed Google Forms results for three years before destroying the data in accordance with research standards. Finally, this chapter discussed significant limitations and delimitations associated with the study. Limitations in this study include challenges with generalizability of the findings based on the target population sampled and geographical location of the study, as well as difficulties in establishing a cause and effect relationship due to the nature of the correlational design of the study. Delimitations in this study

include the potential for lack of generalizability based on exclusion criteria of the target population and the use of a cross-sectional design.

The implementation of sampling from a diverse population of post-graduate disciplines, majors, and degree levels may somewhat mitigate the limited generalizability associated with this study. The researcher may have slightly reduced the lack of causality related to this study by the implementation of a predictive correlation design with multiple linear regression analysis, which may allow the researcher to draw predictive conclusions among study variables. Finally, the benefits of using a cross-sectional design may outweigh the negative consequences, which include enhanced research efficiency, reduced history effects, and decreased respondent fatigue. Chapter 4 will present a detailed discussion of the data analysis results obtained from the data collection procedures outlined in Chapter 3. Additionally, Chapter 4 will provide a comprehensive breakdown of descriptive data, checks of assumptions, and statistical data results regarding PsyCap as measured by the PCQ-24 and Academic Burnout as measured by the MBI-SS.

Chapter 4: Data Analysis and Results

Introduction

It was not known if, or to what extent, a significant predictive relationship exists between the composite and sub-categorical levels of Psychological Capital and Academic Burnout in American post-graduate students. Academic Burnout is prevalent among university students. For example, Santen et al. (2010) conducted a quantitative correlational study examining the prevalence of Academic Burnout in a sample of 249 medical students. Santen et al. found that 21% of first-year students, over 40% of second- and third-year students, and 31% of fourth-year students experienced a moderate or high degree of Academic Burnout in medical school. In addition to significant prevalence, Academic Burnout has been found to have negative consequences. These consequences include decreased student engagement (Schaufeli et al., 2002), lower academic performance, reduced student motivation and incivility in the classroom (Asayesh et al., 2016; Rad et al., 2015; Rad et al., 2017). Further, Academic Burnout is typically related to a state of exhaustion associated with the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008).

In a study by Rad et al. (2017), PsyCap and Academic Burnout were found to exhibit a negative relationship with each other, indicating that as levels of PsyCap increase, the expression of Academic Burnout decreases. However, this finding is limited in generalizability outside of the Iranian student population (Rad et al., 2017). Future research was recommended to investigate the relationship between Psychological Capital and Academic Burnout in other countries (Rad et al., 2017). Therefore, a gap in the literature exists as to whether the composite and sub-composite categories of

Psychological Capital predict Academic Burnout in the United States. The purpose of this quantitative correlational study was to determine if, or to what extent, the composite and sub-composite categories of Psychological Capital predict Academic Burnout in American post-graduate health science students at a university in the Southeastern United States.

The quantitative methodology with a correlational design was selected for this study. A quantitative methodology commonly includes objective measurements in the testing and examination of theories, variables, and hypotheses (Fraenkel et al., 2015). A correlational design is typically used to investigate the potential relationship between predictor and criterion variables (Lund Research Ltd., 2018). Based on the purpose of the study, the quantitative methodology with a correlational design was the most appropriate choice for addressing the research question and associated hypotheses of this study. In this study, Academic Burnout served as the criterion variable, while PsyCap and the four sub-group constructs of PsyCap, Hope, Efficacy, Resilience, and Optimism, served as the predictor variables. Academic Burnout was measured by the MBI-SS in this study, while the PCQ-24 measured PsyCap, Hope, Efficacy, Resilience, and Optimism.

Conceptually, Psychological Capital (PsyCap) derives from a theoretical foundation grounded in positive psychology theory characterized by Hope, Efficacy, Resilience, and Optimism constructs (Luthans, Youssef, & Avolio, 2007, p. 3). A positive motivational state that intentional goal-directed energy (agency) and its associated pathways will lead to accomplishing established goals is the conceptual definition of Hope (Snyder et al., 1991, p. 287). For Efficacy, the conceptual definition derived from Bandura (1997, p. 3), who defined it as the perceived belief that one's

capabilities directly lead to the successful planning and completion of a specific course of action. The personal assets or resources that predict positive adaptation and success in the face of significant adversity is the conceptual definition of Resilience (Masten, 2001). Finally, the conceptual definition of Optimism is the belief acknowledging that positive outcomes and events are realistic based on evaluations of internal and external attributions (Seligman, 1998; Seligman & Csikszentmihalyi, 2000).

For this study, the operational definition of PsyCap and the associated four constructs of Hope, Efficacy, Resilience, and Optimism refers to the aptitude level obtained from sampled post-graduate health science students from a university in the Southeastern United States as measured by the PCQ-24. The PCQ-24 is comprised of 24 questions to measure PsyCap (refer to Appendix D) with six questions related to each of the sub-group categories, including Hope, Efficacy, Resilience, and Optimism (Luthans et al., 2010; Luthans, Avolio, Avey, & Norman, 2007). The responses generate ratings on a 6-point Likert-type scale that yields an ordinal level of statistical measurement with a total composite score of a maximum of 144 and a minimum of 24. Each sub-category on the PCQ-24 yields a maximum score of 36 and a minimum score of 6 (refer to Appendix D).

Conceptually, Academic Burnout derives from the three-construct model of Exhaustion, Cynicism, and Competence in students within an educational setting (Schaufeli et al., 2002). For this study, the operational definition of Academic Burnout and the associated three constructs of Exhaustion, Cynicism, and Competence refers to the severity level obtained from sampled post-graduate health science students from a university in the Southeastern United States as measured by the Maslach Burnout

Inventory-Student Survey (MBI-SS). The MBI-SS includes 16 total questions to measure Academic Burnout (refer to Appendix D), with 6 questions specific to the sub-category of Competence (maximum score of 36 and minimum score of 0), and 5 questions each specific to the Exhaustion and Cynicism sub-categories (maximum score of 30 and a minimum score of 0). The items on the MBI-SS are scored on a frequency scale ranging from 0 (never) to 6 (always) and yields an ordinal level of statistical measurement with a total composite score of a maximum of 96 and a minimum of 0 (refer to Appendix D) (Schaufeli et al., 2002).

As previously mentioned, both the PCQ-24 and the MBI-SS use Likert scale items yielding an ordinal level of measurement. However, for this study, the Likert scale ratings were approximated to continuous (interval) data to meet the assumptions of multiple linear regression analysis pertaining to the use of continuous criterion and predictor variables. The use of Likert scale items as continuous (interval) data have been previously established and accepted in literature related to the MBI-SS and the PCQ-24 (Bernstein & Volpe, 2016; Bikar et al., 2018; Ding et al., 2015; Kristanto et al., 2016; Rad et al., 2017; Wang et al., 2017). The research question and associated hypotheses aligned with the criterion and predictor variables. The following research question and hypotheses served as a guide for this study:

RQ1: Does Psychological Capital (PsyCap) and its associated constructs of (a) Hope, (b) Efficacy, (c) Resilience, and (d) Optimism, predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS)?

$H_0$1: The composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_1: The composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$2: The Hope sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_2: The Hope sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$3: The Efficacy sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_3: The Efficacy sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students

as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$4: The Resilience sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_4: The Resilience sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$5: The Optimism sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_5: The Optimism sub-composite score Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

Chapter 4 will present an overview of the data preparation, the demographic profile of the sample participants, and the descriptive findings of the study. Additionally, the study will present the specific results from the inferential analysis conducted to test the hypotheses established in this study, including simple linear regression analysis and multiple linear regression analysis. Finally, this chapter will introduce the outline of the

significant components of Chapter 5, which include a discussion of the implications of the data analysis results, an overview of the strengths and weaknesses of the study, and provide recommendations for future research based on the results of the study.

Descriptive Findings

The following section will provide an overview of the data preparation and demographic profile obtained during data analysis for the participants of this study. Additionally, this section will provide the results of scale reliability testing conducted regarding the MBI-SS and PCQ-24 instruments. The researcher utilized convenience sampling of the target population, which involved invitations to participate in the study to 627 actively enrolled students in post-graduate studies within a Southeastern University's College of Health Sciences. Of the participants invited, 462 students were pursuing a doctoral level degree, while 165 were pursuing a Master's level degree. A minimum of 85 participants from the target population was needed based on a power of 0.80 ($\beta = 0.80$), a significance level of .05 ($\alpha = .05$), and an effect size of 0.15 ($\rho = .15$), which is summarized in Appendix E.

The data cleaning and preparation conducted by the researcher involved exporting the completed survey responses from Google Forms into an Excel spreadsheet for upload into a statistics software program for data analysis. A total of 96 participants completed the survey on Google Forms following acceptance of informed consent, which equates to a response rate of about 15%. Once data was exported into the Excel spreadsheet, the researcher examined the document for missing data responses. Of the 96 responses received, the researcher omitted six responses that contained missing information from the data set. Table 3 presents the self-reported data results regarding the demographic

profile of the study participants, which specifically includes age, gender, marital status, program of study, and level of experience (length of time enrolled in a specific program).

Regarding the demographic profile, 84 participants (93.33%) reported an age between 18-30 years, 74.44% of the study participants identified with the female gender, and 76.67% of participants in this study identified as single, never married. Additionally, 82.22% of study participants identified the Doctor of Physical Therapy program as their program of study. Finally, participants exhibit a broad and varied level of experience in this study based on the length of time enrolled in their current graduate program. Specifically, 45.56% of study participants identified with 1-12 months enrolled in their current graduate program, while 28.89% and 21.11% identified with 13-24 months and 24-36 months enrolled in their current graduate program, respectively.

Table 3.

Demographic Profile

Variable	*n*	%	Cumulative %
Age Group			
18-24	47	52.22	52.22
25-30	37	41.11	93.33
40 or older	4	4.44	97.78
31-39	2	2.22	100
Gender Identity			
Female	67	74.44	74.44
Male	23	25.56	100
Marital Status			
Single, never married	69	76.67	76.67
Married	18	20.00	96.67
Divorced	3	3.33	100
Program of Study			
Doctor of Physical Therapy	74	82.22	82.22
Masters of Physician Assistant Medicine	13	14.44	96.67
Masters of Public Health	3	3.33	100
Level of Experience			
1-12 months	41	45.56	45.56
13-24 months	26	28.89	74.44
25-36 months	19	21.11	95.56
More than 36 months	4	4.44	100

Note: *n*=90

Variable descriptive statistics were calculated for both the predictor and criterion variables and the findings are outlined in Table 4 below. The observations for the MBI-SS total score show a mean score of 55.80 with a standard deviation of 11.14, which is a significant finding of moderate prevalence of Academic Burnout in the participants tested. Additionally, the observations for the PCQ-24 total score demonstrate an average of 107.20 with a standard deviation of 13.93, which is a significant finding of strong psychological capital in the participants tested. Further of note is the observation regarding kurtosis, particularly for the Resilience variable. When the kurtosis is greater than or equal to 3, then the variable's distribution is markedly different than a normal

distribution in its tendency to produce outliers, which is strongly apparent in the Resilience construct for this study (Westfall & Henning, 2013).

Table 4.

Variable Descriptive Statistics

Variable	*M*	*SD*	Min	Max	*Mdn*	Skewness	Kurtosis
MBI_SS_Total_Score	55.80	11.14	33.00	88.00	54.00	0.29	-0.09
PCQ24_EFFICACY	26.58	3.75	17.00	36.00	26.00	-0.30	0.18
PCQ24_HOPE	27.61	4.10	14.00	36.00	28.00	-0.64	0.80
PCQ24_OPTIMISM	25.74	4.98	13.00	35.00	26.50	-0.61	-0.00
PCQ24_RESILIENCE	27.27	4.16	6.00	35.00	28.00	-1.61	6.16
PCQ24_TOTAL_SCORE	107.20	13.93	53.00	131.00	109.50	-1.08	1.99

Scale reliability testing was conducted for the instruments utilized in this study and the results are summarized in Table 5. Specifically, a Cronbach alpha coefficient was calculated for the MBI-SS Instrument scale used to measure Academic Burnout, and the PCQ-24 Instrument used to measure Psychological Capital, Hope, Efficacy, Resilience, and Optimism variables. The Cronbach's alpha coefficient was evaluated using the guidelines suggested by George and Mallery (2016) where > .9 is excellent, > .8 is good, > .7 is acceptable, > .6 is questionable, > .5 is poor, and ≤ .5 is unacceptable. The items for MBI-SS Instrument had a Cronbach's alpha coefficient of .90, indicating good reliability. The items for PCQ-24 Instrument had a Cronbach's alpha coefficient of .92, indicating excellent reliability. Regarding the subcategories of Psychological Capital, Hope and Optimism were both found to have a Cronbach's alpha coefficient of .84, indicating good reliability. Resilience was also found to have good reliability with a Cronbach's alpha coefficient of .80, while Efficacy was found to have acceptable reliability with a Cronbach's alpha coefficient of .79. In summary, the results of scale reliability testing indicate that the MBI-SS was a reliable instrument in the measurement

of Academic Burnout, while the PCQ-24 was a reliable instrument in the measurement of Psychological Capital, including all four subcategories.

Table 5.

Scale Reliability Testing

Scale	Number of Items	α	Lower Bound	Upper Bound
MBI-SS Instrument	16	.90	.87	.93
PCQ-24 Instrument	24	.92	.90	.94
PCQ-24 Hope	6	.84	.79	.89
PCQ-24 Efficacy	6	.79	.73	.86
PCQ-24 Resilience	6	.80	.74	.87
PCQ-24 Optimism	6	.84	.79	.89

Note. The lower and upper bounds of Cronbach's α were calculated using a 95.00% confidence interval.

Data Analysis Procedures

The following section will provide a detailed description of the data analyses utilized to examine the problem statement: It was not known if, or to what extent, a significant predictive relationship exists between the composite and sub-categorical levels of Psychological Capital and Academic Burnout in American post-graduate students. All data in this study were collected from an online survey using Google Forms and included demographic related questions, the Psychological Capital Questionnaire (PCQ-24) to measure the predictor variables of PsyCap, Hope, Efficacy, Resilience, and Optimism constructs, and the Maslach Burnout Inventory-Student Survey (MBI-SS) to measure the criterion variable of Academic Burnout. Upon data analysis, this study attempted to address the following research question: Does Psychological Capital (PsyCap) and its associated constructs of (a) Hope, (b) Efficacy, (c) Resilience, and (d) Optimism, predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach

Burnout Inventory-Student Survey (MBI-SS)? A multiple linear regression analysis was initially selected to address each of the hypotheses associated with the research question, which are as follows:

$H_0$1: The composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_1: The composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$2: The Hope sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_2: The Hope sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$3: The Efficacy sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_3: The Efficacy sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_04: The Resilience sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_4: The Resilience sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_05: The Optimism sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_5: The Optimism sub-composite score Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

The following are major assumptions tested associated with multiple linear regression analysis: (a) use of a continuous criterion variable satisfied by previous research using Maslach Burnout Inventory-Student Survey (MBI-SS) Likert scale data as

a continuous label (Bikar et al., 2018; Kristanto et al., 2016; Rad et al., 2017; Wang et al., 2017), (b) the use of two or more predictor variables that are continuous or categorical, which is satisfied by previous research using PCQ-24 Likert scale data as a continuous label (Bernstein & Volpe, 2016; Ding et al., 2015; Rad et al., 2017; Wang et al., 2017); (c) variables are normally distributed, which was verified by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution (Q-Q scatterplot), (d) a linear relationship must exist between criterion and predictor variables, which was assessed by visual inspection of data on a scatterplot, (e) independence of errors must exist, which was evaluated by checking the Durbin-Watson statistic, (f) homoscedasticity of residuals must exist by ruling out heteroscedasticity, which was assessed by plotting the studentized residuals against the unstandardized predicted (fitted) values, (g) the data must not show multicollinearity, which was evaluated through variance inflation factors (VIFs) between predictors, (h) no significant outlier or influential points, which was assessed by plotting the absolute values of the studentized residuals against the observation numbers (Lund Research Ltd., 2018; Williams et al., 2013).

Upon completion of the multiple linear regression analysis, it was discovered that aliased coefficients, or perfect multicollinearity, occurred between the total score of PsyCap as measured by the PCQ-24 and the Optimism sub-category of PsyCap as measured by the PCQ-24. This perfect multicollinearity violated one of the major assumptions of multiple linear regression analysis, thus the data analysis procedure needed to be adjusted. Therefore, the researcher implemented a simple linear regression analysis between Academic Burnout as measured by the total score on the MBI-SS and PsyCap, as measured by the total score on the PCQ-24. Dropping the total score on the

PCQ-24 from the multiple linear regression analysis removed the violation of perfect multicollinearity and still allowed for predictive testing of the relationship between Academic Burnout and Psychological Capital.

Thus, the researcher performed simple linear regression analysis regarding the total score of Academic Burnout and the total score of Psychological Capital to test H_1. A total of 90 participants served as the final sample size for data analysis. Several assumptions relative to simple linear regression analysis were tested for in this study (Lund Research Ltd., 2018; Williams et al., 2013). First, a normal distribution of variables must be present for simple linear regression analysis. The assumption of normality was assessed by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution, also called a Q-Q scatterplot (DeCarlo, 1997). For the assumption of normality to be met, the quantiles of the residuals must not strongly deviate from the theoretical quantiles. Substantial deviations could indicate that the parameter estimates are unreliable. The assumption of normality was met in the analysis of H_1 and is summarized in the Q-Q scatterplot of the model residuals in Figure 1.

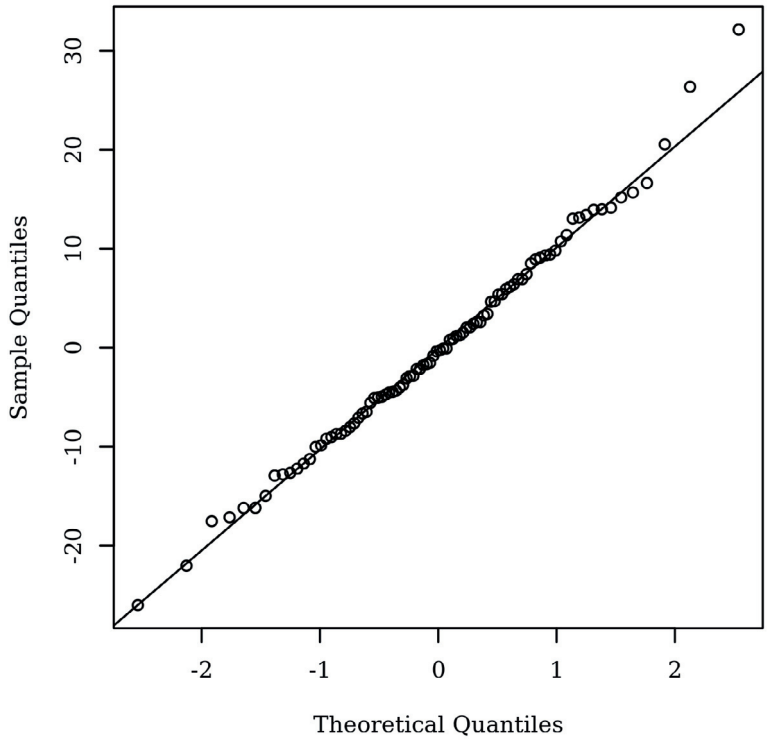

Figure 1. Q-Q scatterplot for normality of the residuals for the regression model.

The next assumption tested for H_1 involved establishing a linear relationship between criterion and predictor variables. The assumption for a linear relationship between the MBI_SS_Total_Score and the PCQ24_TOTAL_SCORE was assessed and met in the analysis of H_1 based on visual inspection of a scatterplot, which is provided in Figure 2.

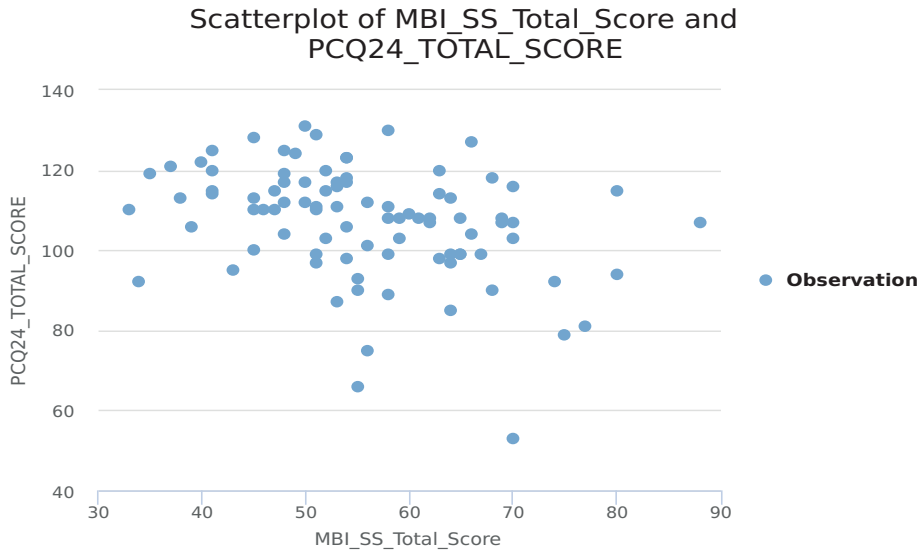

Figure 2. Scatterplot for linear relationship between Academic Burnout and PsyCap variables.

The third assumption tested for simple linear regression analysis associated with H_1 is the examination of independence of errors (observations). A Durbin-Watson test was conducted to assess the degree of autocorrelation among the residuals. For the Durbin-Watson test, a value ranging from 1.5 to 2.5 indicates relatively no autocorrelation, with values outside of this range indicating a cause for concern (Field, 2009). The result was not significant, $DW = 1.72$, $p = .090$, suggesting there was little to no autocorrelation among the residuals. The assumption of the variables showing homoscedasticity was tested next by plotting the residuals against the predicted values (Bates, Mächler, Bolker, & Walker, 2014; Field, 2013). The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature. The assumption of homoscedasticity was met in the analysis of H_1 and is presented in a scatterplot of predicted values and model residuals in Figure 3.

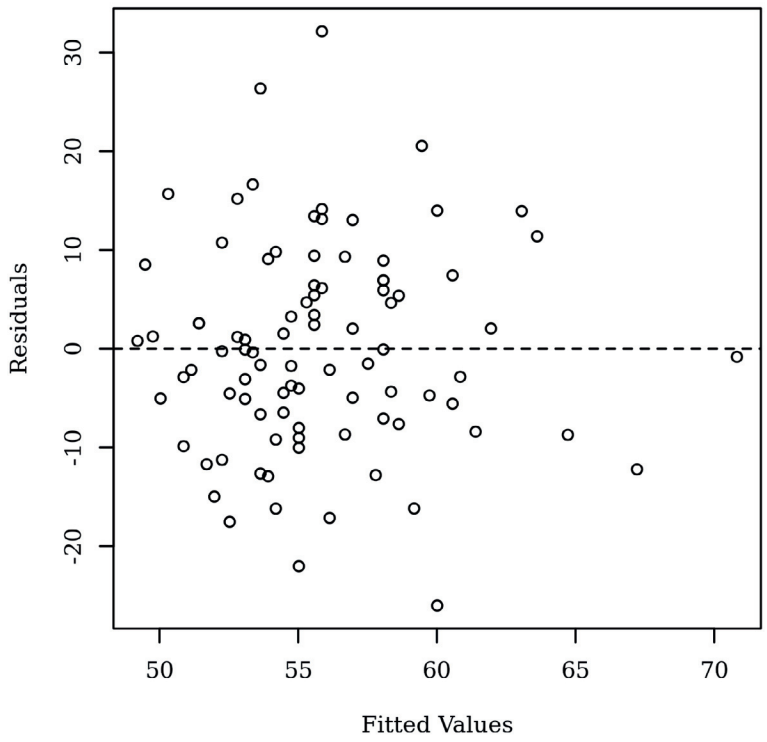

Figure 3. Residuals scatterplot testing homoscedasticity.

Since there was only one predictor variable, multicollinearity does not apply. Subsequently, the researcher did not calculate Variance Inflation Factors. The next assumption tested for simple linear regression analysis refers to outlier and influential points. To identify outlier and influential points, studentized residuals were calculated and the absolute values were plotted against the observation numbers (Field, 2013; Stevens, 2009). Studentized residuals are calculated by dividing the model residuals by the estimated residual standard deviation. An observation with a studentized residual greater than 3.18 in absolute value, the 0.999 quartiles of a *t* distribution with 89 degrees of freedom, was considered to have a significant influence on the results of the model. Figure 4 presents the studentized residuals plot of the observations with little influential and outlier points of note. Observation numbers are specified next to each

point with a studentized residual greater than 3.18. Thus, the assumption of outlier points is met in the analysis of H_1.

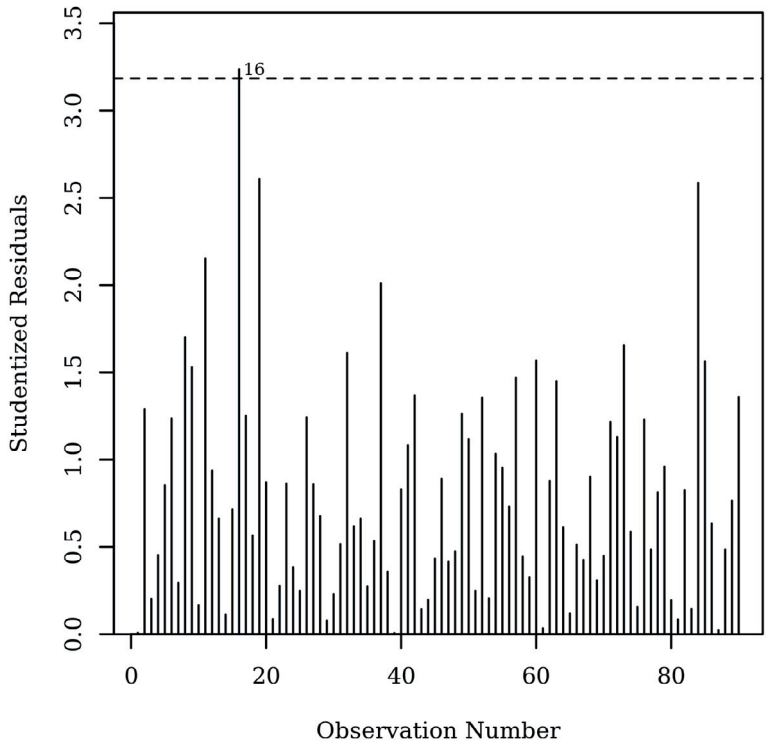

Figure 4. Studentized residuals plot for outlier detection.

Finally, the following assumptions related to simple linear regression were met in this study: (a) the use of a continuous criterion variable satisfied by previous research using Maslach Burnout Inventory-Student Survey (MBI-SS) Likert scale data as a continuous label (Bikar et al., 2018; Kristanto et al., 2016; Rad et al., 2017; Wang et al., 2017), and (b) the use of one predictor variable that is continuous or categorical, which is satisfied by previous research using PCQ-24 Likert scale data as a continuous label (Bernstein & Volpe, 2016; Ding et al., 2015; Rad et al., 2017; Wang et al., 2017). Once the researcher tested the assumptions for simple linear regression analysis, the researcher

tested the assumptions for multiple linear regression analysis used to examine H_2, H_3, H_4, and H_5.

The researcher utilized multiple linear regression analysis regarding the total score of Academic Burnout and each sub-category of Psychological Capital (Hope, Efficacy, Resilience, and Optimism) to examine H_2, H_3, H_4, and H_5. A total of 90 participants served as the final sample size for data analysis. Several assumptions relative to multiple linear regression analysis were tested in this study (Lund Research Ltd., 2018; Williams et al., 2013). First, a normal distribution of variables must be present for multiple linear regression analysis. The assumption of normality was assessed by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution, also called a Q-Q scatterplot (DeCarlo, 1997). For the assumption of normality to be met, the quantiles of the residuals must not strongly deviate from the theoretical quantiles. Substantial deviations could indicate that the parameter estimates are unreliable. The assumption of normality was met in the analysis of H_2, H_3, H_4, and H_5 and is summarized in the Q-Q scatterplot of the model residuals in Figure 5.

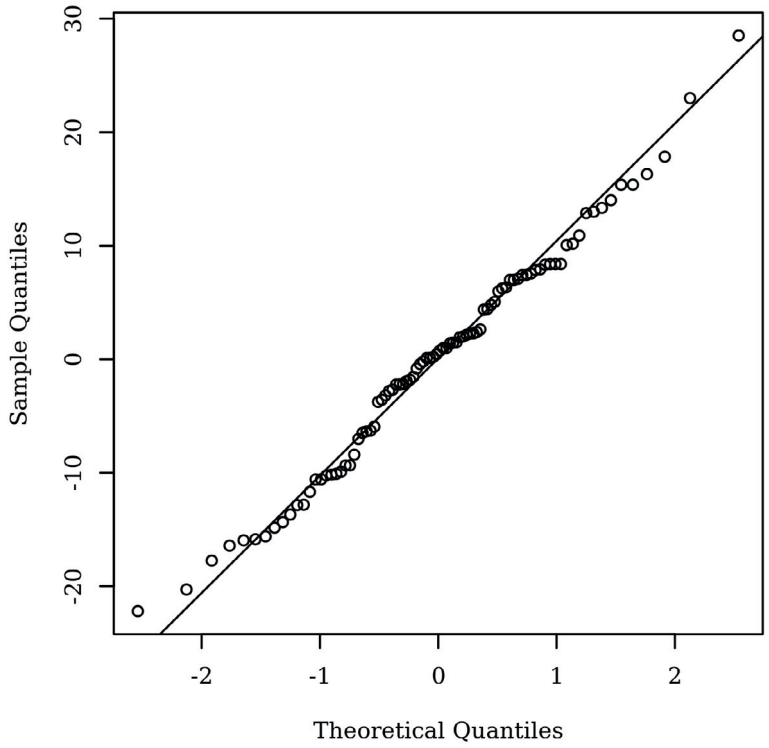

Figure 5. Q-Q scatterplot for normality of the residuals for the regression model.

The next assumption tested for H_2, H_3, H_4, and H_5 involved establishing a linear relationship between criterion and predictor variables. The assumption for a linear relationship between the MBI_SS_Total_Score and the PsyCap sub-categories of PCQ24_EFFICACY, PCQ24_HOPE, PCQ24_RESILIENCE, and PCQ24_OPTIMISM, was assessed and met based on visual inspection of a scatterplot, which is provided in Figures 6, 7, 8, and 9.

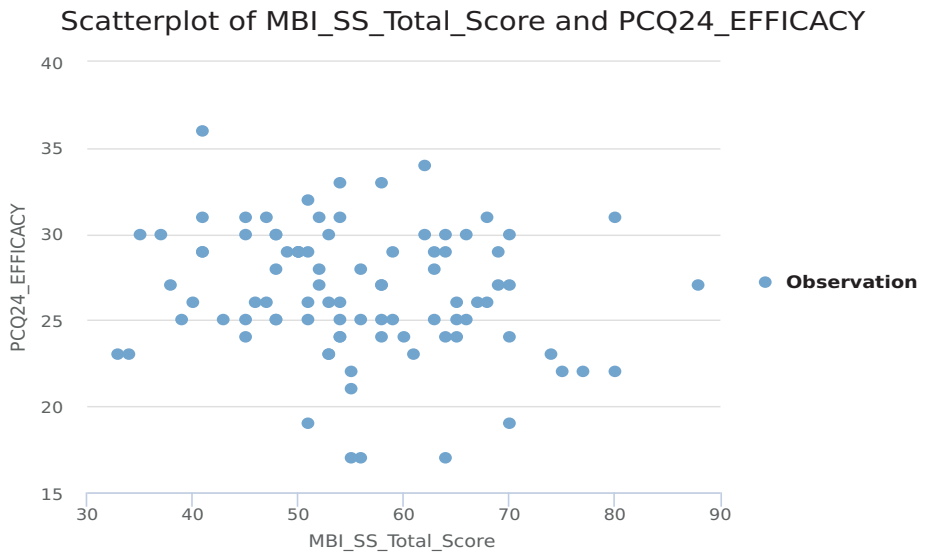

Figure 6. Scatterplot for linear relationship between Academic Burnout and Efficacy variables.

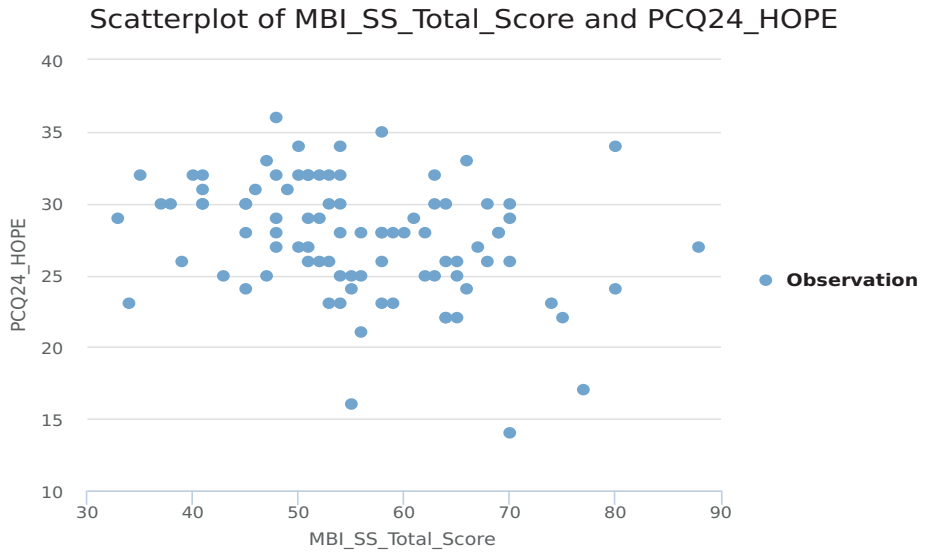

Figure 7. Scatterplot for linear relationship between Academic Burnout and Hope variables.

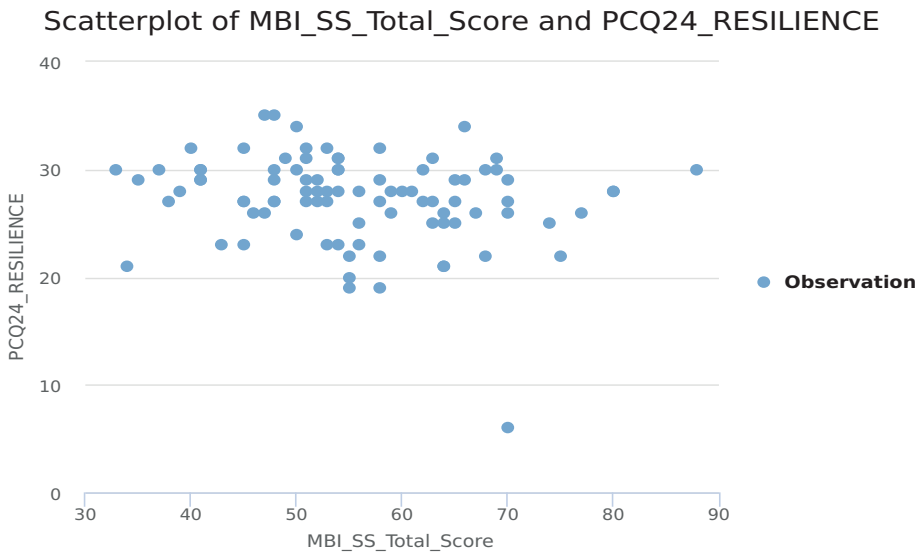

Figure 8. Scatterplot for linear relationship between Academic Burnout and Resilience variables.

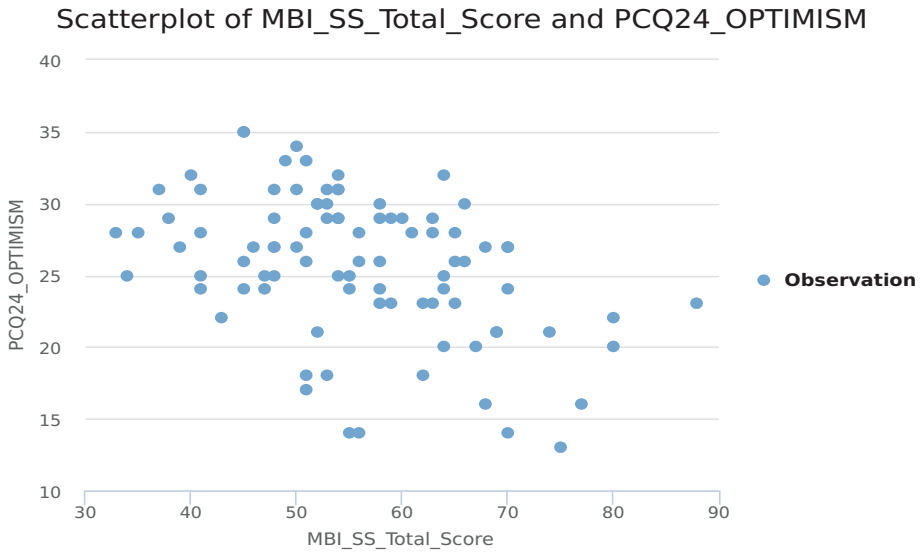

Figure 9. Scatterplot for linear relationship between Academic Burnout and Optimism variables.

The third assumption tested for multiple linear regression analysis associated with H_2, H_3, H_4, and H_5 is the examination of independence of errors (observations). A Durbin-Watson test was conducted to assess the degree of autocorrelation among the

residuals. A value between 1.5 and 2.5 on the Durbin-Watson test indicates relatively no autocorrelation (Field, 2009). The result was not significant, $DW = 1.62$, $p = .036$, suggesting there was little to no autocorrelation among the residuals. The assumption of the variables showing homoscedasticity was tested next by plotting the residuals against the predicted values (Bates et al., 2014; Field, 2013). The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature. The assumption of homoscedasticity was met in the analysis of H_2, H_3, H_4, and H_5 and is presented in a scatterplot of predicted values and model residuals in Figure 10.

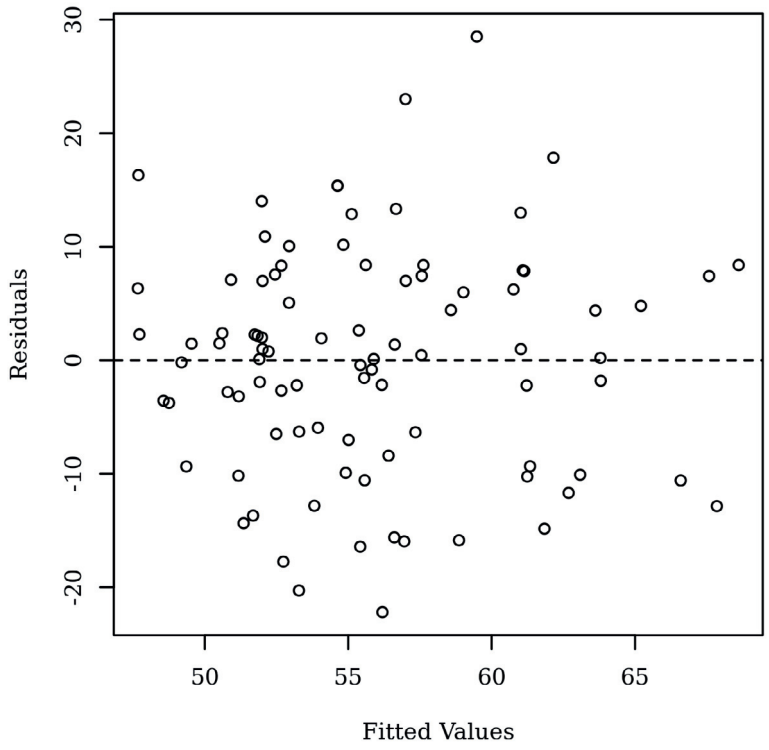

Figure 10. Residuals scatterplot testing homoscedasticity.

The next assumption tested regarding multiple linear regression analysis involved checking for multicollinearity. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. High VIFs indicate increased effects of multicollinearity in the model. VIFs greater than 5 are cause for concern, whereas VIFs of 10 should be considered the maximum upper limit (Menard, 2009). All predictors in the regression model have VIFs less than 10. Thus, the assumption of multicollinearity in the analysis of H_2, H_3, H_4, and H_5 was met. Table 6 presents the VIF for each predictor in the model.

Table 6.

Variance Inflation Factors

Variable	VIF
PCQ24_EFFICACY	1.61
PCQ24_HOPE	2.34
PCQ24_RESILIENCE	1.95
PCQ24_OPTIMISM	1.69

The next assumption tested regarding multiple linear regression analysis involved checking for outliers and influential points. To identify influential points, studentized residuals were calculated and the absolute values were plotted against the observation numbers (Field, 2013; Stevens, 2009). Studentized residuals are calculated by dividing the model residuals by the estimated residual standard deviation. An observation with a studentized residual greater than 3.18 in absolute value, the 0.999 quartiles of a *t* distribution with 89 degrees of freedom, was considered to have a significant influence on the results of the model. The assumption of influential points was met in the analysis of H_2, H_3, H_4, and H_5. Figure 11 presents the studentized residuals plot of the

observations. Observation numbers are specified next to each point with a studentized residual greater than 3.18.

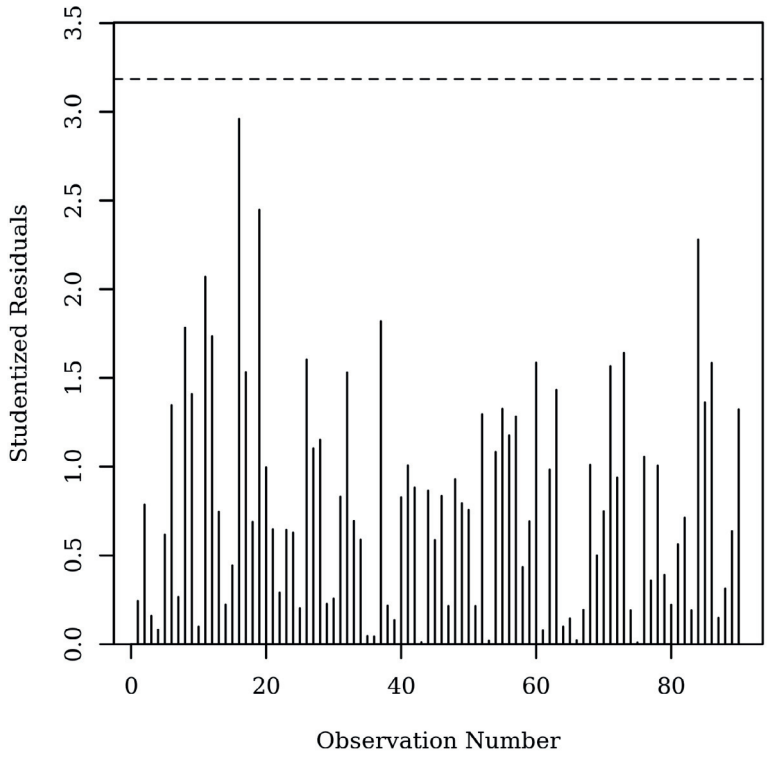

Figure 11. Studentized residuals plot for outlier detection.

Finally, the following assumptions related to multiple linear regression were met in this study: (a) the use of a continuous criterion variable satisfied by previous research using Maslach Burnout Inventory-Student Survey (MBI-SS) Likert scale data as a continuous label (Bikar et al., 2018; Kristanto et al., 2016; Rad et al., 2017; Wang et al., 2017), and (b) the use of two or more predictor variables that are continuous or categorical, which is satisfied by previous research using PCQ-24 Likert scale data as a continuous label (Bernstein & Volpe, 2016; Ding et al., 2015; Rad et al., 2017; Wang et al., 2017). Once the researcher completed the testing of assumptions, the simple linear

regression and multiple linear regression analyses were conducted. The following section will provide the results of the simple linear regression analysis used to examine H_1 and the multiple linear regression analysis used to examine H_2, H_3, H_4, and H_5.

Results

Following testing for all the afore-mentioned assumptions, a simple linear regression analysis was conducted. Specifically, linear regression analysis was conducted to assess whether PCQ24_TOTAL_SCORE significantly predicted MBI_SS_Total_Score. The 'Enter' variable selection method was chosen for the simple linear regression model, which included all of the selected predictors. The results of the simple linear regression model were significant, $F(1,88) = 12.00$, $p < .001$, $R^2 = 0.12$, indicating that approximately 12% of the variance in MBI_SS_Total_Score is explainable by PCQ24_TOTAL_SCORE. The regression equation was: predicted MBI-SS Total Score = 85.50 - 0.28*(PCQ-24 Total Score). PCQ24_TOTAL_SCORE significantly predicted MBI_SS_Total_Score, $B = -0.28$, $t(88) = -3.46$, $p < .001$. This finding indicates that on average, a one-unit increase of PCQ24_TOTAL_SCORE will decrease the value of MBI_SS_Total_Score by 0.28 units. Post hoc power analysis of the simple linear regression model, which can be viewed in Appendix E, revealed an observed power of 0.933. The model summary for simple linear regression analysis is presented in Table 7 and includes an *R* value of 0.346, with an *R* Square value of 0.120 and an Adjusted *R* Square value of 0.110.

Table 7.

Model Summary 1

Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate
Simple Linear Regression	.346	.120	.110	10.5061

Note. Predictors: (Constant), PCQ24 TOTAL SCORE. Dependent Variable: MBI-SS Total Score

In summary, the null hypothesis ($H_0 1$) was rejected based on the findings of the simple linear regression analysis. The results indicate that the total score of Psychological Capital is a significant predictor of Academic Burnout as measured by the PCQ-24 and the MBI-SS, respectively. Table 8 presents the results of the simple linear regression model.

Table 8.

Results for Simple Linear Regression

Variable	*B*	*SE*	*CI*	β	*t*	*p*
(Intercept)	85.50	8.64	[68.32, 102.68]	0.00	9.89	< .001
PCQ24_TOTAL_SCORE	-0.28	0.08	[-0.44, -0.12]	-0.35	-3.46	< .001

Note. CI is at the 95% confidence level. Results: $F(1,88) = 12.00$, $p < .001$, $R^2 = 0.12$
Unstandardized Regression Equation: MBI_SS_Total_Score = 85.50 - 0.28*PCQ24_TOTAL_SCORE

Following testing for all of the afore-mentioned assumptions, multiple linear regression analysis was conducted to test for H_2, H_3, H_4, and H_5. Specifically, multiple linear regression analysis was conducted to assess whether PCQ24_EFFICACY, PCQ24_HOPE, PCQ24_RESILIENCE, and PCQ24_OPTIMISM significantly predicted MBI_SS_Total_Score. The 'Enter' variable selection method was chosen for the multiple linear regression model, which includes all of the selected predictors. The results of the multiple linear regression model were significant, $F(4,85) = 5.17$, $p < .001$, $R^2 = 0.20$, indicating that approximately 20% of the variance in MBI_SS_Total_Score is explainable

by PCQ24_EFFICACY, PCQ24_HOPE, PCQ24_RESILIENCE, and PCQ24_OPTIMISM. The regression equation was: predicted MBI_SS_Total_Score = 79.47 + 0.18*(PCQ24_EFFICACY) - 0.50*(PCQ24_HOPE) + 0.31*(PCQ24_RESILIENCE) - 0.90*(PCQ24_OPTIMISM). Post hoc power analysis of the simple linear regression model, which can be viewed in Appendix E, revealed an observed power of 0.973. The model summary for multiple linear regression analysis is presented in Table 9 and includes an *R* value of 0.443, with an *R* Square value of 0.200 and an Adjusted *R* Square value of 0.158.

Table 9.

Model Summary 2

Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate
Multiple Linear Regression	.443	.200	.158	10.2192

Note. Predictors: (Constant), PCQ24 Optimism, PCQ24 Efficacy, PCQ24 Resilience, PCQ24 Hope. Dependent Variable: MBI-SS Total Score

PCQ24_HOPE did not significantly predict MBI_SS_Total_Score, *B* = -0.50, *t*(85) = -1.23, *p* = .222. Based on this sample, a one-unit increase in PCQ24_HOPE does not have a significant effect on MBI_SS_Total_Score. In other words, the Hope construct, as measured by the PCQ-24, did not significantly predict Academic Burnout. Thus, the results of the study did not support H_2, and the null hypothesis ($H_0 2$) was accepted. PCQ24_EFFICACY did not significantly predict MBI_SS_Total_Score, *B* = 0.18, *t*(85) = 0.49, *p*= .625. Based on this sample, a one-unit increase in PCQ24_EFFICACY does not have a significant effect on MBI_SS_Total_Score. In other words, the Efficacy construct, as measured by the PCQ-24, did not significantly predict

Academic Burnout. Thus, the results of the study did not support H_3, and the null hypothesis ($H_0$3) was accepted.

PCQ24_RESILIENCE did not significantly predict MBI_SS_Total_Score, B = 0.31, $t(85) = 0.85$, $p = .400$. Based on this sample, a one-unit increase in PCQ24_RESILIENCE does not have a significant effect on MBI_SS_Total_Score. Thus, the Resilience construct, as measured by the PCQ-24, was not found to be a significant predictor of Academic Burnout. Therefore, the results of the study did not support H_4, and the null hypothesis ($H_0$4) was accepted. PCQ24_OPTIMISM significantly predicted MBI_SS_Total_Score, $B = -0.90$, $t(85) = -3.17$, $p = .002$. This finding indicates that on average, a one-unit increase of PCQ24_OPTIMISM will decrease the value of MBI_SS_Total_Score by 0.90 units. Thus, the Optimism construct, as measured by the PCQ-24, was found to be a significant predictor of Academic Burnout. In other words, the results of this study support H_5, and the null hypothesis ($H_0$5) was rejected. Table 10 presents the results of the regression model.

Table 10.

Results for Multiple Linear Regression

Variable	*B*	*SE*	*CI*	β	*t*	*p*
(Intercept)	79.47	8.76	[62.05, 96.90]	0.00	9.07	< .001
PCQ24_EFFICACY	0.18	0.37	[-0.55, 0.91]	0.06	0.49	.625
PCQ24_HOPE	-0.50	0.40	[-1.30, 0.31]	-0.18	-1.23	.222
PCQ24_RESILIENCE	0.31	0.36	[-0.42, 1.03]	0.12	0.85	.400
PCQ24_OPTIMISM	-0.90	0.28	[-1.46, -0.33]	-0.40	-3.17	.002

Note. CI is at the 95% confidence level. Results: $F(4,85) = 5.17$, $p < .001$, $R^2 = 0.20$ Unstandardized Regression Equation: MBI_SS_Total_Score = 79.47 + 0.18*PCQ24_EFFICACY - 0.50*PCQ24_HOPE + 0.31*PCQ24_RESILIENCE - 0.90*PCQ24_OPTIMISM

Summary

The purpose of this quantitative correlational study was to determine if, or to what extent, the composite and sub-composite categories of Psychological Capital predict Academic Burnout in American post-graduate health science students at a university in the Southeastern United States. In this study, H_1 was tested using simple linear regression analysis. In this study, all assumptions associated with the use of simple linear regression were met, and the results provide support for H_1. Specifically, the results of the simple linear regression model were significant, $F(1,88) = 12.00$, $p < .001$, $R^2 = 0.12$, indicating that approximately 12% of the variance in MBI_SS_Total_Score is explainable by PCQ24_TOTAL_SCORE. Therefore, the null hypothesis ($H_0 1$) was rejected in this study. Specifically, PCQ24_TOTAL_SCORE significantly predicted MBI_SS_Total_Score, $B = -0.28$, $t(88) = -3.46$, $p < .001$. This finding indicates that on average, a one-unit increase of PCQ24_TOTAL_SCORE will decrease the value of MBI_SS_Total_Score by 0.28 units. Thus, the results indicate that the total score of PsyCap, as measured by the PCQ-24, is a significant predictor of Academic Burnout, as measured by the MBI-SS, in post-graduate students enrolled in the College of Health Sciences at a university in the Southeastern United States.

Additionally, a multiple linear regression analysis was utilized to examine H_2, H_3, H_4, and H_5. In this study, all assumptions associated with multiple linear regression analysis were met, and the results provide support for H_5. Specifically, the null hypothesis ($H_0 5$) is rejected in this study as PCQ24_OPTIMISM significantly predicted MBI_SS_Total_Score, $B = -0.90$, $t(85) = -3.17$, $p = .002$. This finding indicates that on average, a one-unit increase of PCQ24_OPTIMISM will decrease the value of

MBI_SS_Total_Score by 0.90 units. Thus, the results indicate that the Optimism sub-category of PsyCap, as measured by the PCQ-24, is a significant predictor of Academic Burnout, as measured by the MBI-SS, in post-graduate students enrolled in the College of Health Sciences at a university in the Southeastern United States. However, the results of the multiple linear regression analysis conducted in this study did not provide support for H_2, H_3, and H_4. Specifically, H_02, H_03, and H_04 null hypotheses were accepted based on the findings of this study. The Hope, Efficacy, and Resilience sub-categories of PsyCap, as measured by the PCQ-24, are not significant predictors of Academic Burnout, as measured by the MBI-SS, in post-graduate students enrolled in the College of Health Sciences at a university in the Southeastern United States.

Chapter 5 will present the implications of the data analysis findings outlined in this chapter. Specifically, Chapter 5 will provide a summary of the results of the study and present concluding remarks relative to the study. Additionally, Chapter 5 will present a detailed discussion of the theoretical, practical, and future implications of the results of this study. Finally, Chapter 5 will present the strengths and weaknesses of the study and provide future practical and research directed recommendations based on the results of this study.

Chapter 5: Summary, Conclusions, and Recommendations

Introduction and Summary of Study

The purpose of this quantitative correlational research was to examine if, or to what extent, the composite and sub-categorical levels of Psychological Capital predict Academic Burnout in post-graduate health science students at a university in the Southeastern United States. There is a significant prevalence of Academic Burnout among university students (Santen et al., 2010). However, a lack of literature involves sampling populations that include post-graduate students. Academic burnout is associated with significant negative consequences, such as a state of exhaustion related to the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008). Additionally, Academic Burnout is correlated with behavioral incivility in the classroom, low levels of motivation, and poor academic performance (Rad et al., 2015; Rad et al., 2017). Previous research has identified that individuals with a positive affective mindset and a strong Resilience trait may have a decreased risk of experiencing Academic Burnout (Bikar et al., 2018; Ying et al., 2016). One such theoretical paradigm that embodies a positive affective mindset and Resilience is Psychological Capital (PsyCap).

PsyCap is a positive psychology construct consisting of Hope, Efficacy, Resilience, and Optimism resources. PsyCap is positively associated with well-being, engagement, motivation, positive study and learning habits, and academic achievement (Siu et al., 2014). Additionally, individuals with higher levels of PsyCap are likely to have less stress and burnout, both in the workplace and the academic environment (Kaur & Amin, 2017; Kaur & Kaur Sandhu, 2016; Rabenu & Yaniv, 2017; Rad et al., 2017;

Wang et al., 2017; Yim et al., 2017). Specifically, previous empirical research has established a predictive relationship between PsyCap and Academic Burnout in post-graduate medical students in the country of Iran (Rad et al., 2017). Further examination of the relationship between PsyCap and Academic Burnout in students outside the country of Iran was recommended (Rad et al., 2017). Therefore, it was not known if, or to what extent, a significant predictive relationship exists between the composite and sub-categorical levels of Psychological Capital and Academic Burnout in American post-graduate health science students. The aim of this dissertation sought to fill this identified research gap.

The results of this study directly contributed to the existing literature and extended the understanding of the predictive relationship of PsyCap and Academic Burnout in American post-graduate health science students. The findings of this research further deepen the knowledge base of the theoretical underpinning for both Psychological Capital and Academic Burnout. Conceptually, Psychological Capital (PsyCap) derives from a theoretical foundation grounded in positive psychology theory characterized by Hope, Efficacy, Resilience, and Optimism constructs (Luthans, Youssef, & Avolio, 2007, p. 3). A positive motivational state that intentional goal-directed energy (agency) and its associated pathways will lead to accomplishing established goals is the conceptual definition of Hope (Snyder et al., 1991, p. 287). For Efficacy, the conceptual definition derived from Bandura (1997, p. 3), who defined it as the perceived belief that one's capabilities directly lead to the successful planning and completion of a specific course of action. The personal assets or resources that predict positive adaptation and success in the face of significant adversity is the conceptual definition of Resilience (Masten, 2001).

Finally, the conceptual definition of Optimism is the belief acknowledging that positive outcomes and events are realistic based on evaluations of internal and external attributions (Seligman, 1998; Seligman & Csikszentmihalyi, 2000).

For this study, the operational definition of PsyCap and the associated four constructs of Hope, Efficacy, Resilience, and Optimism refers to the aptitude level obtained from sampled post-graduate health science students from a university in the Southeastern United States as measured by the PCQ-24. The PCQ-24 is comprised of 24 questions to measure PsyCap (refer to Appendix D) with six questions related to each of the sub-group categories, including Hope, Efficacy, Resilience, and Optimism (Luthans et al., 2010; Luthans, Avolio, Avey, & Norman, 2007). The responses generate ratings on a 6-point Likert-type scale that yields an ordinal level of statistical measurement with a total composite score of a maximum of 144 and a minimum of 24. Each sub-category on the PCQ-24 yields a maximum score of 36 and a minimum score of 6 (refer to Appendix D).

Conceptually, Academic Burnout derives from the three-construct model of Exhaustion, Cynicism, and Competence in students within an educational setting (Schaufeli et al., 2002). For this study, the operational definition of Academic Burnout and the associated three constructs of Exhaustion, Cynicism, and Competence refers to the severity level obtained from sampled post-graduate health science students from a university in the Southeastern United States as measured by the Maslach Burnout Inventory-Student Survey (MBI-SS). The MBI-SS includes 16 total questions to measure Academic Burnout (refer to Appendix D), with 6 questions specific to the sub-category of Competence (maximum score of 36 and minimum score of 0), and 5 questions each

specific to the Exhaustion and Cynicism sub-categories (maximum score of 30 and a minimum score of 0). The items on the MBI-SS are scored on a frequency scale ranging from 0 (never) to 6 (always) and yields an ordinal level of statistical measurement with a total composite score of a maximum of 96 and a minimum of 0 (refer to Appendix D) (Schaufeli et al., 2002).

The PCQ-24 and the MBI-SS instruments both use Likert scale items yielding an ordinal statistical level of measurement. However, for this study, the Likert scale ratings were approximated to continuous (interval) data to meet the assumptions of multiple linear regression analysis pertaining to the use of continuous criterion and predictor variables. The use of Likert scale items as continuous (interval) data have been previously established and accepted in literature related to the MBI-SS and the PCQ-24 (Bernstein & Volpe, 2016; Bikar et al., 2018; Ding et al., 2015; Kristanto et al., 2016; Rad et al., 2017; Wang et al., 2017). To fully understand whether a predictive relationship existed between PsyCap and Academic Burnout, appropriate research questions and associated hypotheses were needed that align with the purpose of the study, the problem statement, and the theoretical foundations for Academic Burnout and Psychological Capital. The following research question and hypotheses served as a guide for this study:

RQ1: Does Psychological Capital (PsyCap) and its associated constructs of (a) Hope, (b) Efficacy, (c) Resilience, and (d) Optimism, predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS)?

$H_0$1: The composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_1: The composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$2: The Hope sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_2: The Hope sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$3: The Efficacy sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_3: The Efficacy sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students

as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$4: The Resilience sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_4: The Resilience sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

$H_0$5: The Optimism sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_5: The Optimism sub-composite score Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

The researcher implemented a convenience sampling of the target population for this study. A total of 96 participants of the study completed the Psychological Capital Questionnaire (PCQ-24) to measure Psychological Capital and the Maslach Burnout Inventory-Student Survey (MBI-SS) to measure Academic Burnout as part of a survey on Google Forms. Additionally, participants of the study also self-reported general

demographic information on the survey, which included age, gender, marital status, program, and level of experience (time enrolled in a post-graduate program). This information was used to establish a demographic profile of the sample participants and was not intended to serve as covariates for this particular study.

The quantitative methodology was selected to examine if, or to what extent, the composite and sub-categorical levels of Psychological Capital predict Academic Burnout in post-graduate health science students at a university in the Southeastern United States. Additionally, a correlational design was ideal for the design of this specific study. Simple linear regression analysis allows researchers to examine the relationship between one criterion variable with one predictor variable (Fraenkel et al., 2015; Portney & Watkins, 2009). Further, multiple linear regression analysis allows researchers to examine the relationship between a criterion variable with two or more predictor variables (Fraenkel et al., 2015; Portney & Watkins, 2009). Since this study investigated whether PsyCap and its four constructs are predictor variables of Academic Burnout, a correlational design with multiple linear regression analysis was the most appropriate selection based on the research question and associated hypotheses.

This study incorporated descriptive and inferential statistical analysis. The descriptive statistical analysis for this study included mean and median measures of central tendency, as well as the use of standard deviation as a measure of spread. The inferential statistical analysis for this study included standard error of the mean and confidence intervals to estimate population parameters. Additionally, the first study hypothesis (H_1) was tested using simple linear regression analysis as opposed to being included in the multiple linear regression analysis for H_2, H_3, H_4, and H_5 due to the

predictor variables demonstrating multicollinearity. Linear regression analysis was conducted and involved testing for assumptions, determining how well the regression model fit the data, inspecting the estimated model coefficients, and testing for the statistical significance of each predictor variable (Lund Research Ltd., 2018).

The remainder of this chapter will offer readers reasons and clarifications as to how the results of this study contribute to the current knowledge base of Academic Burnout and Psychological Capital among American post-graduate students. This chapter will also outline the emerging themes identified in the findings of the study and discuss how these themes extend the current knowledge base. Additionally, Chapter 5 will present a detailed discussion of the theoretical, practical, and future implications of this research. Chapter 5 will conclude with a critical evaluation of the strengths and weaknesses of the study and provide recommendations for future research.

Summary of Findings and Conclusion

The empirical research is scarce regarding the relationship between Academic Burnout and Psychological Capital (PsyCap). Review of the current literature revealed that Academic burnout is associated with significant negative consequences, such as a state of exhaustion related to the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008). Additionally, Academic Burnout is correlated with behavioral incivility in the classroom, low levels of motivation, and poor academic performance (Rad et al., 2015; Rad et al., 2017). Additionally, recent literature has indicated that PsyCap is positively associated with well-being, engagement, motivation, positive study and learning habits, and academic achievement (Siu et al., 2014). Further, individuals with higher levels of PsyCap are

likely to have less stress and burnout, both in the workplace and the academic environment (Kaur & Amin, 2017; Kaur & Kaur Sandhu, 2016; Rabenu & Yaniv, 2017; Rad et al., 2017; Wang et al., 2017; Yim et al., 2017). Specifically, increased PsyCap is predictive of reduced Academic Burnout in medical students in Iran (Rad et al., 2017). However, further study of the relationship between PsyCap and Academic Burnout in countries other than Iran was recommended (Rad et al., 2017).

Based on the current literature related to Academic Burnout and PsyCap, it was therefore warranted to study whether PsyCap is a predictor of Academic Burnout in American post-graduate health science students. The researcher formulated one research question and five hypotheses to investigate the potential predictive relationship between Academic Burnout and PsyCap, including its associated constructs of Hope, Efficacy, Resilience, and Optimism. The following research question (RQ1) served as the framework for this study: Does Psychological Capital (PsyCap) and its associated constructs of (a) Hope, (b) Efficacy, (c) Resilience, and (d) Optimism, predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS)? The researcher elected to utilize a quantitative methodology with a correlational design to examine RQ1, which provided a quantitative measurement of the direction and strength of the relationships relative to the research question (Fraenkel et al., 2015). Utilizing linear regression analysis, the researcher provided answers by testing each of the formulated hypotheses. The remainder of this section of Chapter 5 will present the thematic findings of the study that align with each established

hypothesis and discuss how these findings contribute, and possibly extend, the current knowledge base relative to Academic Burnout and PsyCap.

The first hypothesis tested relative to RQ1 was stated as follows:

$H_0$1: The composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_1: The composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

The researcher utilized simple linear regression analysis to test H_1, and the findings indicated that PsyCap was a significant predictor of Academic Burnout. Specifically, the results of $F(1,88) = 12.00$, $p < .001$, $R^2 = 0.12$ indicate that approximately 12% of the variance in Academic Burnout is explainable by PsyCap. Additionally, the findings of $B = -0.28$, $t(88) = -3.46$, $p < .001$ indicate that on average, a one-unit increase of PsyCap will decrease the value of Academic Burnout by 0.28 units, as measured by the PCQ-24 and the MBI-SS, respectively. Therefore, the researcher rejected the null hypothesis ($H_0$1).

The second hypothesis tested relative to RQ1 was stated as follows:

$H_0$2: The Hope sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health

science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_2: The Hope sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

The researcher conducted multiple linear regression analysis to test H_2 and the findings of the multiple linear regression analysis were significant. Specifically, the findings of $F(4,85) = 5.17$, $p < .001$, $R^2 = 0.20$ indicate that approximately 20% of the variance in Academic Burnout is explainable by Hope, Efficacy, Resilience, and Optimism. However, further examination of the findings revealed that Hope was not a significant predictor of Academic Burnout. The findings of $B = -0.50$, $t(85) = -1.23$, $p = .222$ were not significant, thus, the null hypothesis ($H_0 2$) was accepted.

The third hypothesis tested relative to RQ1 was stated as follows:

$H_0 3$: The Efficacy sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_3: The Efficacy sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

The researcher utilized multiple linear regression analysis to test H_3 and the findings of the multiple linear regression analysis were significant. Specifically, the findings of $F(4,85) = 5.17$, $p < .001$, $R^2 = 0.20$ indicate that approximately 20% of the variance in Academic Burnout is explainable by Hope, Efficacy, Resilience, and Optimism. However, further examination of the findings revealed that Efficacy was not a significant predictor of Academic Burnout. The findings of $B = 0.18$, $t(85) = 0.49$, $p = .625$ were not significant, thus, the null hypothesis ($H_0 3$) was accepted.

The fourth hypothesis tested relative to RQ1 was stated as follows:

$H_0 4$: The Resilience sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_4: The Resilience sub-composite score of Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

The researcher implemented multiple linear regression analysis to test H_4 and the findings of the multiple linear regression analysis were significant. Specifically, the results of $F(4,85) = 5.17$, $p < .001$, $R^2 = 0.20$ indicate that approximately 20% of the variance in Academic Burnout is explainable by Hope, Efficacy, Resilience, and Optimism. However, further examination of the findings revealed that Resilience was not a significant predictor of Academic Burnout. The results of $B = 0.31$, $t(85) = 0.85$, $p = .400$ were not significant, and the null hypothesis ($H_0 4$) was accepted.

The fifth hypothesis tested relative to RQ1 was stated as follows:

$H_0$5: The Optimism sub-composite score of Psychological Capital does not significantly predict Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

H_5: The Optimism sub-composite score Psychological Capital significantly predicts Academic Burnout in American post-graduate health science students as measured by the Psychological Capital Questionnaire (PCQ-24) and the Maslach Burnout Inventory-Student Survey (MBI-SS).

The researcher utilized multiple linear regression analysis to test H_5, and the findings indicated that PsyCap was a significant predictor of Academic Burnout. Specifically, the results of $F(4,85) = 5.17$, $p < .001$, $R^2 = 0.20$ indicate that approximately 20% of the variance in Academic Burnout is explainable by Hope, Efficacy, Resilience, and Optimism. Additionally, the findings of $B = -0.90$, $t(85) = -3.17$, $p = .002$ indicate that on average, a one-unit increase of Optimism will significantly decrease the value of Academic Burnout by 0.90 units, as measured by the PCQ-24 and the MBI-SS, respectively. Therefore, the researcher rejected the null hypothesis ($H_0$5).

In synthesizing the results from the study, the researcher uncovered three main conclusions. First, the finding that PsyCap is a predictor of Academic Burnout extends the knowledge base regarding the relationship between PsyCap and Burnout Syndrome in the current literature. The majority of the current research related to PsyCap and Burnout pertain specifically to the workplace environment (Arrogante & Aparicio-Zaldivar, 2017; Barkhuizen et al., 2014; Guo et al., 2015; Onuoha & Idemudia, 2017; Rushton et al.,

2015; Wang et al., 2017). However, the literature in this field that does relate to the educational environment has previously studied health science students outside of the United States educational system (Boni et al., 2018; Charkhabi et al., 2013; Rad et al., 2017). For example, Rad et al. (2017) conducted a quantitative correlational study with multiple regression analysis and found a significant negative relationship between PsyCap and Academic Burnout in Iranian medical students. The findings by Rad et al. (2017) advanced the knowledge base regarding the predictive relationship between PsyCap and Academic Burnout to include the educational environment. The results of the current study confirm the findings in Rad et al. (2017) and has advanced the current knowledge base of the relationship between PsyCap and burnout to include health science students from the American educational system.

The second main conclusion based on the syntheses of the results involved the significant contribution of knowledge in the field that Optimism is a substantial predictor of Academic Burnout. Previous literature has identified that Optimism negatively correlates with burnout syndrome (Barkhuizen et al., 2014; Bikar et al., 2018; Boni et al., 2018). Additionally, literature has established a negative predictive relationship between Optimism and Academic Burnout. Vizoso, Arias-Gundín, and Rodríguez (2019) conducted a quantitative correlational study to examine whether coping strategies and Optimism predict Academic Burnout and academic performance in a sample of 532 undergraduate students at a Spanish University. The authors found a significant predictive relationship between Optimism and Academic Burnout, in addition to a significant predictive relationship between coping strategies and Academic Burnout (Vizoso et al., 2019). Dispositional Optimism was found to significantly predict the

Emotional Exhaustion aspect of Academic Burnout in Spanish undergraduate students (Vizoso et al., 2019). Therefore, the authors concluded that Optimism is likely a protective factor against the negative emotional stressors of exhaustion related to burnout syndrome (Vizoso et al., 2019). Thus, the finding of this study that Optimism is a significant predictor of Academic Burnout confirms the results by Vizoso et al. (2019) and adds a meaningful contribution to the current literature. Further, the results of this study extend the understanding of the relationship between Optimism and Academic Burnout to include health science students in the United States educational system.

The third main conclusion involved enhancing the current knowledge of the predictive relationship between Academic Burnout, Hope, Efficacy, and Resilience. Previous research has identified a strong negative correlation between Burnout and Hope, Efficacy, and Resilience (Arrogante & Aparicio-Zaldivar, 2017; Charkhabi et al., 2013; Rushton et al., 2015). However, empirical research is lacking regarding the predictive relationship between Hope, Efficacy, Resilience, and Academic Burnout in the current literature. The results of this study did not find a significant predictive relationship among these variables. These unexpected findings call for a qualitative investigation as to why higher levels of Hope, Efficacy, and Resilience do not predict lower levels of Academic Burnout risk in students. It is possible that Hope, Efficacy, and Resilience are constructs of PsyCap that are most important from an intervention standpoint once a student has already acquired Academic Burnout, as opposed to predicting whether a student may be at risk.

It is possible that Hope, Efficacy, and Resilience are closely correlated with each other, as was found in previous literature (Cassidy, 2015; Narayanan & Weng Onn, 2016;

Rushton et al., 2015). It may be that the instrumentation used in this study did not discriminate well enough in the measurement between these variables. Therefore, future research is warranted to investigate whether a predictive relationship exists between Hope, Efficacy, Resilience, and Academic Burnout utilizing specific gold standard instrumentation for Hope, Efficacy, and Resilience. While the results of this study extend the understanding of the relationship between Hope, Efficacy, Resilience, and Academic Burnout to include students in the American educational system, future research is needed to determine the role of PsyCap intervention, including the sub-categories of Hope, Efficacy, Resilience, and Optimism, for Academic Burnout in students.

In summary, the findings of this study directly answered the research question and associated hypotheses to fill the gap in the literature relative to the predictive relationship between Academic Burnout and PsyCap, including its four associated constructs of Hope, Efficacy, Resilience, and Optimism. Specifically, the results indicate that PsyCap overall is a significant predictor of Academic Burnout in American post-graduate health science students. Additionally, the results suggest that Optimism is the only sub-category of PsyCap that is a significant predictor of Academic Burnout in American post-graduate health science students. The findings of this study contribute to the current knowledge base regarding the relationships between Burnout and PsyCap, Hope, Efficacy, Resilience, and Optimism. Additionally, the results expand the existing literature relative to the predictive relationships between Burnout and PsyCap, Hope, Efficacy, Resilience, and Optimism. Further, the results of this study extend the current literature to a population that includes post-graduate health science students in the United States educational system.

Implications

This quantitative correlational study was designed to examine the predictive relationship between Academic Burnout and Psychological Capital among American post-graduate health science students. The findings of this study revealed statistically significant predictive relationships between PsyCap and Academic Burnout, as well as the Optimism sub-category of PsyCap and Academic Burnout. The results of this study provided theoretical, practical, and future implications regarding the relationship between Academic Burnout and PsyCap in the United States educational system. The following section of Chapter 5 will provide a detailed discussion regarding the discoveries of this research and how these discoveries could be interpreted based on the theoretical framework of the study. Additionally, practical implications for solving current problems in the United States educational system are offered based on the findings of this study. Finally, future implications for new research are presented based on the discovered themes of the study.

Theoretical implications. The first theoretical foundation guiding this study was Academic Burnout, which involves a state of depleted energy, exhaustion and feelings of low personal accomplishment in response to the psychological and emotional demands placed on the individual by the academic environment (Neumann, 1990). According to Schaufeli et al. (2002), Exhaustion, Cynicism, and Competence serve as the three categories that characterize Academic Burnout. The second theoretical foundation that helped to guide this study was Psychological Capital (PsyCap), which incorporates positive psychology theory. Hope, Efficacy, Resilience, and Optimism are four state-like constructs that characterize PsyCap (Luthans, Youssef, & Avolio, 2007, p. 3). Previous

literature has established a negative predictive relationship between Academic Burnout and PsyCap in Iranian medical students (Rad et al., 2017). Thus, the researcher theorized that a negative predictive relationship between Academic Burnout and PsyCap would occur in post-graduate health science students in the American educational system. Therefore, it was not known if, or to what extent, a significant predictive relationship exists between the composite and sub-categorical levels of Psychological Capital and Academic Burnout in American post-graduate health science students. The researcher generated one research question and five hypotheses to study the predictor variables of PsyCap, Hope, Efficacy, Resilience, and Optimism, and the criterion variable of Academic Burnout among American post-graduate health science students.

This study generated empirical evidence to validate that the positive psychology theoretical framework of PsyCap significantly and negatively predicts the Exhaustion, Cynicism, and Competence theoretical framework of Academic Burnout. The specific findings from the simple linear regression analysis ($F(1,88) = 12.00$, $p < .001$, $R^2 = 0.12$; $B = -0.28$, $t(88) = -3.46$, $p < .001$) supports the findings that PsyCap is a negative predictor of Academic Burnout conceptualized by Rad et al. (2017). Additionally, the results of this study advanced the theoretical framework of PsyCap and Academic Burnout by extending the application of the relationship between these theories to the United States educational system. Further, this research extended the conceptual understanding of the predictive relationship between Academic Burnout and PsyCap to include the sub-categorical examination of each of the four PsyCap constructs. Specifically, the results of the multiple linear regression analysis showed the most significant predictive relationship occurs between Academic Burnout and the Optimism

sub-category of PsyCap ($F(4,85) = 5.17$, $p < .001$, $R^2 = 0.20$; $B = -0.90$, $t(85) = -3.17$, $p = .002$). Therefore, the findings of this study advance the current knowledge in the field relative to the theoretical framework of PsyCap, Optimism, and Academic Burnout. Specifically, positive psychology and an optimistic expectation that good outcomes will result from increased effort (Luthans et al., 2010; Seligman, 1998; Seligman & Csikszentmihalyi, 2000) are strong predictors of Academic Burnout based on the findings of this study.

The results of this study may advance and change the way instructors, advisors, and administrators conceptualize Academic Burnout prevention among students. For example, students may theoretically be at less risk of experiencing Academic Burnout should instructors, advisors, and administrators employ encouraging and affirming behavior toward students. Thus, instructors, advisors, and administrators may need to shift their way of thinking such that if students put in productive and effective work, the outcomes will likely be positive and successful. This thought process aligns with the argument by Salmela-Aro et al. (2008) that when students perceive their teachers as positive and motivational, the risk of students experiencing Academic Burnout is lessened. In summary, the findings of this study might guide important future research that provides a better understanding of the predictive relationship between PsyCap, Optimism, and Academic Burnout in the United States educational system.

Practical implications. Previous research has established that a significant prevalence of Academic Burnout exists among health science university students. For example, Santen et al. (2010) conducted a quantitative correlational study examining the prevalence of Academic Burnout in a sample of 249 medical students. Santen et al. found

that 21% of first-year students, over 40% of second- and third-year students, and 31% of fourth-year students experienced a moderate or high degree of Academic Burnout in medical school. Additionally, previous research has established several significant negative consequences associated with Academic Burnout. These consequences include decreased student engagement (Schaufeli et al., 2002), lower academic performance, reduced student motivation and incivility in the classroom (Asayesh et al., 2016; Rad et al., 2015; Rad et al., 2017). Further, research has shown that Academic Burnout is typically correlated with a state of exhaustion associated with the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008). In summary, previous literature has indicated that Academic Burnout is a significant societal problem due to its prevalence and associated negative consequences in the health science educational environment.

This study has confirmed previous research that Psychological Capital is a negative predictor of Academic Burnout in university students (Rad et al., 2017). Specifically, this study found that a one-point increase in PsyCap, as measured by the PCQ-24, will decrease the value of Academic Burnout, as measured by the MBI-SS, by 0.28 units. This finding provides a significant practical benefit for programmatic instructors, advisors, and administrators in post-graduate health science education in the United States. First, the results indicate the need for instructors, advisors, and administrators to examine the risk profile of Academic Burnout for each student, as well as identify each student's baseline capacity for PsyCap. Second, the results of this study indicate the need for continual monitoring of PsyCap and Academic Burnout among students. For example, it is possible that the risk of Academic Burnout may change or

fluctuate depending on multiple additional variables, such as stress, sleep habits, and grade performance, among others. Therefore, a student's risk profile for Academic Burnout is likely not fixed or static, requiring varied advisement, mentorship, and intervention approaches from instructors, advisors, and administrators.

Third, the results suggest that education programs ought to consider strategies that develop and cultivate PsyCap among its students, which may significantly decrease the overall risk of its students experiencing Academic Burnout. For example, Psychological Capital Intervention (PCI) is a treatment program focusing on the developmental dimensions of PsyCap constructs and includes a two-hour workshop on fostering the following dimensions: (a) goals and pathways, (b) implementing obstacle planning, (c) building confidence and efficacy, (d) developing positive expectancy, (e) experiencing success and modeling others, (f) enhancing persuasion and arousal, (g) building assets and avoiding risks, and (h) how to affect the influence process (Luthans et al., 2010). Future research as to the effectiveness of the PCI, as outlined in Luthans et al. (2010), in reducing the risk profile for Academic Burnout among students is indicated. Additionally, the findings of this study provide further practical value as to the aspect of PsyCap that would give the most significant impact on reducing the risk of Academic Burnout among American post-graduate health science students. Optimism was found to be the only sub-category construct of PsyCap that is a significant predictor of Academic Burnout in this study.

Optimism refers to an individual's perception that their outcome will likely be a positive success. Optimism is a state-like characteristic that promotes positive psychological health and well-being (Farber, 2016) and enhanced Resilience and life

satisfaction (Rathore, 2017). Research has shown that Optimism serves as a decisive factor in an individual establishing and attaining goals, which in turn positively influences the satisfaction of basic psychological needs (well-being) (Ionescu, 2017). In other words, Optimism may be a predictive correlate of emotional well-being for individuals in the higher education setting. Additionally, previous research has shown that individuals with higher Optimism have the capacity for developing greater social support networks, the achievement of goals, and improved happiness by enhancing individuals' positive feelings of oneself (Tariq & Zubair, 2015). Thus, previous research has found that Optimism is a predictive factor in goal achievement and emotional well-being.

However, there is a lack of empirical investigation into the predictive relationship between Optimism and Academic Burnout. The findings of this study advance the knowledge specific to the role of Optimism in predicting Academic Burnout in American post-graduate health science students. The results of this study extend the knowledge that Optimism is not only a predictive factor in goal attainment and well-being (Ionescu, 2017; Tariq & Zubair, 2015) but also a strong negative predictor of Academic Burnout. The results of multiple linear regression analysis showed that a one-unit increase of Optimism, as measured by the PCQ-24, will decrease the value of Academic Burnout, as measured by the MBI-SS, by 0.90 units. This finding provides a significant practical benefit for programmatic instructors, advisors, and administrators in post-graduate health science education in the United States. The results indicate the need for instructors, advisors, and administrators to identify each student's baseline capacity for Optimism. Additionally, the results of this study indicate the need for continual monitoring of

Optimism in students. It is possible that Optimism may change or fluctuate depending on multiple variables, such as stress, sleep habits, and grade performance, among others. Therefore, a student's level of Optimism is likely not a fixed or static state, requiring varied advisement, mentorship, and intervention approaches from instructors, advisors, and administrators. Additionally, the results suggest that education programs ought to consider strategies that develop and cultivate Optimism among its students, such as the PCI program outlined by Luthans et al. (2010), which may significantly decrease the overall risk of its students experiencing Academic Burnout.

Future implications. This study determined that PsyCap and Optimism are significant negative predictors of Academic Burnout among post-graduate health science students at a university in the Southeastern United States. Future research should concentrate on investigating the links between PsyCap, Optimism, and Academic Burnout to further validate the findings of this study. Additionally, future examination should focus on studying intervention strategies to enhance PsyCap and Optimism among university students, such as the PCI program developed by Luthans et al. (2010). Also, future investigations should determine whether interventions to improve PsyCap and Optimism positively impact the risk of Academic Burnout among university students.

Interestingly, the findings of this study did not provide support for the predictive relationship between Academic Burnout and Hope, Efficacy, and Resilience constructs of PsyCap. Future research should include further examination of the relationship among these variables as previous research has indicated that a negative correlation among variables exists (Arrogante & Aparicio-Zaldivar, 2017; Charkhabi et al., 2013; Rushton et al., 2015). Additionally, future studies should consider examining the potential predictive

relationship between Academic Burnout and Hope, Efficacy, and Resilience constructs of PsyCap utilizing gold standard instrumentation, such as the Adult Domain Specific Hope Scale (ADHS), the General Self-Efficacy Scale (GASE), and the Connor-Davidson Resilience Scale (CD-RISC). This examination would help to discriminate whether the relationships between Academic Burnout and Hope, Efficacy, and Resilience found in this study are similar or different when utilizing other widely accepted instrumentation.

This study extended the understanding of the predictive relationship of PsyCap and Academic Burnout found in Rad et al. (2017) by incorporating a sample in the American educational system. Future research should replicate this study in other educational institutions in the United States to further validate the findings. Additionally, replication of this research in studying specific disciplines, such as Doctor of Physical Therapy or Masters of Business Administration, among others, is warranted. Further, replication of this study to examine and compare across disciplines other than health science students is warranted. Finally, future studies ought to implement sampling of a population other than post-graduate students to extend the generalizability of the findings of this study.

Strengths and weaknesses of the study. Several strengths of the current study contribute to the validity and credibility of the results, and thus encourage the practical application of the findings as they relate to Academic Burnout and Psychological Capital. First, the participants of this study included post-graduate health science students at a Southeastern university in the United States. Thus, the study expanded the current knowledge base and generalizability of the predictive relationship between PsyCap and Academic Burnout to include the United States educational system. Second, the findings

of the study may bring attention to the importance of assessing and developing Optimism among university students, as Optimism was found to be the strongest negative predictor of Academic Burnout in this study. Third, the researcher sampled students from the College of Health Sciences at a university in the Southeastern United States that were pursuing both Master's and Doctoral level degrees. Utilization of a population that included different degree levels and areas of studies strengthens the generalizability of the findings.

There were also several weaknesses and limitations of this study. The first weakness of the study involved the use of convenience sampling method. Convenience sampling likely reduced the representativeness of the population, thereby decreasing the generalizability of the results of this study (Fraenkel et al., 2015). The second weakness of the study is that the findings may not generalize to undergraduate or secondary school students as the target population specifically included only post-graduate health science students. Additionally, the results may not generalize to other geographical areas of the United States as the target population involved students enrolled at one university in the Southeastern region of the United States. Another significant weakness of the study is the use of self-report measures for predictor and criterion variables, which can generate concerns about the validity of conclusions made in the study owing to participant's either over- or under-emphasizing problems.

Finally, a linear regression analysis limited the ability of the researcher to draw causal relationships among the variables of study (Lund Research Ltd., 2018; Portney & Watkins, 2009). However, the researcher implemented a predictive correlational study design to help mitigate the limitation in causality. Predictive correlational studies involve

stronger statistical analysis that enables a researcher to determine if a relationship of sufficient magnitude exists between variables such that the score on one variable may predict the score on another variable (Fraenkel et al., 2015). While determining causality is not the aim of predictive correlational studies, the researcher is better able to predict behavior or response based on the relationship of the action to other variables (Portney & Watkins, 2009). Thus, predictive studies may better position future researchers for practical decision making and developing hypothetical interventions for future research (Portney & Watkins, 2009). Thus, the design of the study enhances the credibility of the results to conclude that PsyCap and Optimism are significantly negative predictors of Academic Burnout.

In summary, the current study presents weaknesses in the generalizability of the findings, in establishing causality, and concerns regarding the validity of self-reported measures. However, the predictive correlational design of the study and the incorporation of a sample with multiple degree levels and areas of education helps to mitigate the weaknesses in generalizability and causality. Another strength of this study includes replicating the results of Rad et al. (2017) in a sample of participants in the United States. Replication of the study by Rad et al. (2017) expands the current application of knowledge in the fields of both Academic Burnout and Psychological Capital research. Finally, the results identified Optimism as a substantial predictor variable of Academic Burnout, which advances the current knowledge base in the fields of both Academic Burnout and PsyCap research.

Recommendations

The findings in this study extend the understanding of the predictive relationship between PsyCap and Academic Burnout. Further, this study provides direction and establishes a foundational need for future research and practice. This study examined the predictive relationship between Academic Burnout and PsyCap, Hope, Efficacy, Resilience, and Optimism. The researcher identified statistically significant predictive relationships between Academic Burnout, PsyCap, and Optimism among post-graduate health science students at a university in the Southeastern United States. Based on the results of this study, the researcher offered the following recommendations for future research and practice.

Recommendations for future research. The study met its goal by filling a research gap, as outlined in the literature review in Chapter 2. The findings of this study presented weaknesses and limitations. Further, the researcher has identified other research gaps that have not been addressed based on the results of this study. To further examine the predictive relationship between Academic Burnout and PsyCap, the researcher recommended the following approaches and areas of research:

1. A replication of this study utilizing a target population that differs from post-graduate health science students, such as undergraduate students, or students pursuing business, computer science, arts, or humanities degrees.
2. A replication of this study utilizing a target population in a different region than the Southeastern United States, such as students residing in the Northwestern, Southwestern, Central, or Northeastern United States.
3. A replication of this study utilizing a target population at an educational institution that differs from a private, small liberal arts university, such as a large, public research university, a Historically Black College or University (HBCU), or a community college.
4. An investigation into the relationship between PsyCap and Academic Burnout using other types of research designs, such as a quantitative quasi-experimental

design, a quantitative longitudinal correlational design, or a type of qualitative research design.

5. An investigation to determine if other instrumentation in the measurement of Hope, Resilience and Efficacy, such as the ADHS, CD-RISC, and GASE, produce the same or different results as to the potential predictive relationship between Academic Burnout and Hope, Resilience, and Efficacy.

6. An investigation as to whether specific interventions designed to enhance PsyCap, Hope, Efficacy, Resilience, and Optimism would influence the risk profile for Academic Burnout in students.

Recommendations for future practice. This section outlines recommendations for future practice based on the results of this study. The researcher has aimed these suggestions at instructors, advisors, and administrators in the American higher education system to advocate for policies, practices, mentorship, and programs that reduce the risk of Academic Burnout among students. The following recommendations are offered by this researcher to benefit instructors, advisors, administrators, and students.

1. Implement policies, practices, and programs to assess and evaluate the level of PsyCap and Optimism in enrolled students to serve as a risk assessment tool. This recommendation may allow for the identification of students that may be more likely to experience Academic Burnout early, before associated consequences may have taken form.

2. Implement policies, practices, and programs to foster PsyCap and Optimism development among students, which may mitigate the risks and consequences of Academic Burnout based on the results of this study.

3. Implement targeted student advising and mentorship practices that facilitate PsyCap and Optimism among its students, which may reduce the risks and negative consequences of Academic Burnout.

Again, this study's findings filled a gap in research regarding the predictive relationship between Academic Burnout and PsyCap in the United States educational system. This study added empirical evidence to the scholarly literature as it relates to Academic Burnout and Psychological Capital, such as identifying the importance of Optimism in predicting Academic Burnout among post-graduate health science students

in the Southeastern United States. Therefore, it is the final recommendation of this researcher that higher education instructors, advisors, and administrators in the United States consider the quantitative findings of this study as they make decisions regarding the well-being of their students.

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Appendix A.

Site Authorization Letter

Site authorization letter on file at Grand Canyon University.

Appendix B.

IRB Approval Letter

GRAND CANYON UNIVERSITY

3300 West Camelback Road, Phoenix Arizona 85017 602.639.7500 Toll Free 800.800.9776 www.gcu.edu

DATE:	February 15, 2019
TO:	Benjamin Radack
FROM:	Grand Canyon University Institutional Review Board
STUDY TITLE:	The Predictive Relationship Between Psychological Capital and Academic Burnout in Postgraduate Students
IRB REFERENCE #:	IRB-2019-734
SUBMISSION TYPE:	Initial Review Submission Packet
ACTION:	Determination of Exempt Status
REVIEW CATEGORY:	N/A

Thank you for your submission of New Project materials for this research study.

Grand Canyon University is not the IRB of record since prior approval was obtained from University of Lynchburg Institutinal Review Board for Human Subjects Research. IRB: Approval was obtained on December 4, 2018.

Grand Canyon University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations. You now have GCU IRB approval to collect data.

If applicable, please use the approved informed consent that is included in your published documents.

We will put a copy of this correspondence on file in our office.

If you have any questions, please contact the IRB office at irb@gcu.edu or 602-639-7804. Please include your study title and reference number in all correspondence with this office.

Appendix C.

Informed Consent

INFORMED CONSENT FORM
The Predictive Relationship Between Psychological Capital and Academic Burnout in Post-Graduate Students
INTRODUCTION
The purposes of this form are to provide you (as a prospective research study participant) information that may affect your decision as to whether or not to participate in this research and to record the consent of those who agree to be involved in the study.
RESEARCH
Benjamin M. Radack, doctoral student at Grand Canyon University has invited your participation in a research study. I am completing this research as part of my doctoral degree
STUDY PURPOSE
Academic Burnout is prevalent among university students. Santen et al. found that 21% of first-year students, over 40% of second- and third-year students, and 31% of fourth-year students experienced a moderate or high degree of Academic Burnout in medical school. In addition to significant prevalence, Academic Burnout has been found to have negative consequences. These consequences include decreased student engagement (Schaufeli et al., 2002), lower academic performance, reduced student motivation and incivility in the classroom (Rad et al., 2015). Further, Academic Burnout typically causes a state of exhaustion associated with the demands of school work, a detached attitude toward school, and feelings of inadequacy as a student (Salmela-Aro et al., 2008). Thus, it is essential to conduct research that examines constructs that may reduce the potential for students to experience the negative consequences of Academic Burnout. The purpose of this research study is to examine if Psychological Capital (PsyCap) is a predictor of Academic Burnout in post-graduate students. Studying this relationship may help determine whether positive psychology can reduce the risk of post-graduate students developing burnout syndrome.

ELIGIBILITY
You are eligible to participate in this research if you: 1. Are a post-graduate student 2. Are currently enrolled with the College of Health Sciences at the University of Lynchburg You are not eligible to participate in this research if you: 1. Are not a post-graduate student 2. Are not currently enrolled with the College of Health Sciences at the University of Lynchburg
DESCRIPTION OF RESEARCH ACTIVITY
If you decide to participate, then as a study participant you will be asked to: 1. Complete an online survey through SurveyMonkey or Google Forms that includes completion of demographic information (such as age, gender, marital status, program of study, and level of experience), the Psychological Capital Questionnaire (PCQ-24), and the Maslach Burnout Inventory-Student Survey (MBI-SS). The on-line survey will take approximately 30-45 minutes to complete. Please know that you can choose not to answer any survey question that you do not feel comfortable answering. Additionally, you can choose to withdraw from participation in the study at any time by simply closing your browser. Approximately 100 subjects will be participating in this research study.
RISKS
There are no foreseeable risks associated with participating in this study
BENEFITS
The findings of this study may provide practical value by extending the understanding of the potential predictive relationship between PsyCap and Academic Burnout to American post-graduate health science students. Further implication of this study may be that the findings promote future research that examines whether interventions pertaining to PsyCap development could protect students from experiencing Academic Burnout. Additionally, the results may influence higher education leaders and administrators in policy making designed to reduce the potential for students to experience Academic Burnout. Finally, researching whether a predictive relationship exists between PsyCap and Academic Burnout may have practical implications for post-graduate faculty and administrators with regards to student advising and mentorship practices targeted at preventing the negative consequences of Academic Burnout among students.

CONFIDENTIALITY
All information obtained in this study is strictly confidential unless disclosure is required by law. The results of this research study may be used in reports, presentations, and publications, but the researchers will not identify you. The name on the consent form will not be associated or linked with the completed surveys. In order to maintain confidentiality of your records, Benjamin M. Radack will code any personal information into alphanumeric identifiers and electronically store completed survey documents and consent forms in a password protected computer for three years. All electronically stored data will subsequently be deleted after three years of storage. The people who will have access to your completed survey information are: Benjamin M. Radack and the official dissertation committee.
WITHDRAWAL PRIVILEGE
It is ok for you to decline to participate in this research study. Even if you say yes now, you are free to say no later, and stop participating at any time, there will be no penalty or prejudice to you. You have the right to refuse to participate and/or answer any question(s) for any reason without penalty. If you decide to stop participation, you may do so by: emailing Benjamin M. Radack that you choose not to participate or exit out of your web browser at any time during the survey. If so, I will not use any of the information I gathered from you. Your decision will not affect your relationship with Grand Canyon University, the University of Lynchburg, or otherwise cause a loss of benefits to which you might otherwise be entitled. I ask that you consider participating in this project as I believe it will provide valuable information but please understand that participation is completely voluntary. Nonparticipation or withdrawal from the study will not affect course grades and treatment by institutional faculty or any of its affiliates.
COSTS AND PAYMENTS
There is no financial cost to you as a participant in this study, nor is there payment or compensation for your participation.
COMPENSATION FOR ILLNESS AND INJURY
If you agree to participate in the study, then your consent does not waive any of your legal rights. However, no funds have been set aside to compensate you in the event of injury.
VOLUNTARY CONSENT
Any questions you have concerning the research study or your participation in the study, before or after your consent, will be answered by Benjamin M. Radack, who can be contacted by either email or phone at: BRadack@my.gcu.edu or [redacted].

If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the College of Doctoral Studies at IRB@gcu.edu; (602) 639-7804.

This form explains the nature, demands, benefits and any risk of the research study. By clicking "I Agree' you confirm that you are 18 years or older, understand the content of this form, and agree to participate in this study.

----I Agree ---- I Do Not Agree

Appendix D.

Copy of Instruments and Permissions Letters to Use the Instruments

To whom it may concern, This letter is to grant permission for Benjamin Radack to use the following copyright material:

Instrument: Psychological Capital (PsyCap) Questionnaire (PCQ)

Authors: Fred Luthans, Bruce J. Avolio & James B. Avey.

Copyright: "Copyright © 2007 Psychological Capital (PsyCap) Questionnaire (PCQ) Fred L. Luthans, Bruce J. Avolio & James B. Avey. All rights reserved in all medium."

for his/her thesis/dissertation research. Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation. The entire instrument may not be included or reproduced at any time in any other published material.

Sincerely,

Mind Garden, Inc. www.mindgarden.com

Psychological Capital Questionnaire (PCQ)

Rater Form

Name of the Person or Position being Rated: _____

Date: _____

Instructions: Below are statements that describe how you may think about the person listed above **right now**. Use the following scale to indicate your level of agreement or disagreement with each statement.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6

1. This person feels confident analyzing a long-term problem to find a solution.
2. This person feels confident in representing his/her work area in meetings with management.
3. This person feels confident contributing to discussions about the organization's strategy.
4. This person feels confident helping to set targets/goals in his/her work area.
5. This person feels confident contacting people outside the organization (e.g., suppliers, customers) to discuss problems.
6. This person feels confident presenting information to a group of colleagues.
7. If this person should find him/herself in a jam at work, he/she could think of many ways to get out of it.
8. At the present time, this person is energetically pursuing his/her work goals.
9. This person feels there are lots of ways around any problem.
10. Right now this person sees him/herself as being pretty successful at work.
11. This person can think of many ways to reach his/her current work goals.
12. At this time, this person is meeting the work goals that he/she has set for him/herself.
13. When this person has a setback at work, he/she has trouble recovering from it, moving on.
14. This person usually manages difficulties one way or another at work.
15. This person can be "on his/her own," so to speak, at work if he/she has to.
16. This person usually takes stressful things at work in stride.
17. This person can get through difficult times at work because he/she has experienced difficulty before.
18. This person feels he/she can handle many things at a time at this job.
19. When things are uncertain for this person at work, he/she usually expects the best.
20. This person feels if something can go wrong for him/her work-wise, it will.
21. This person always looks on the bright side of things regarding his/her job.
22. This person is optimistic about what will happen to him/her in the future as it pertains to work.
23. This person feels in this job, things never work out the way he/she wants them to.
24. This person approaches this job as if "every cloud has a silver lining."

Academic Burnout Questionnaire: MBI-SS (Student Survey)

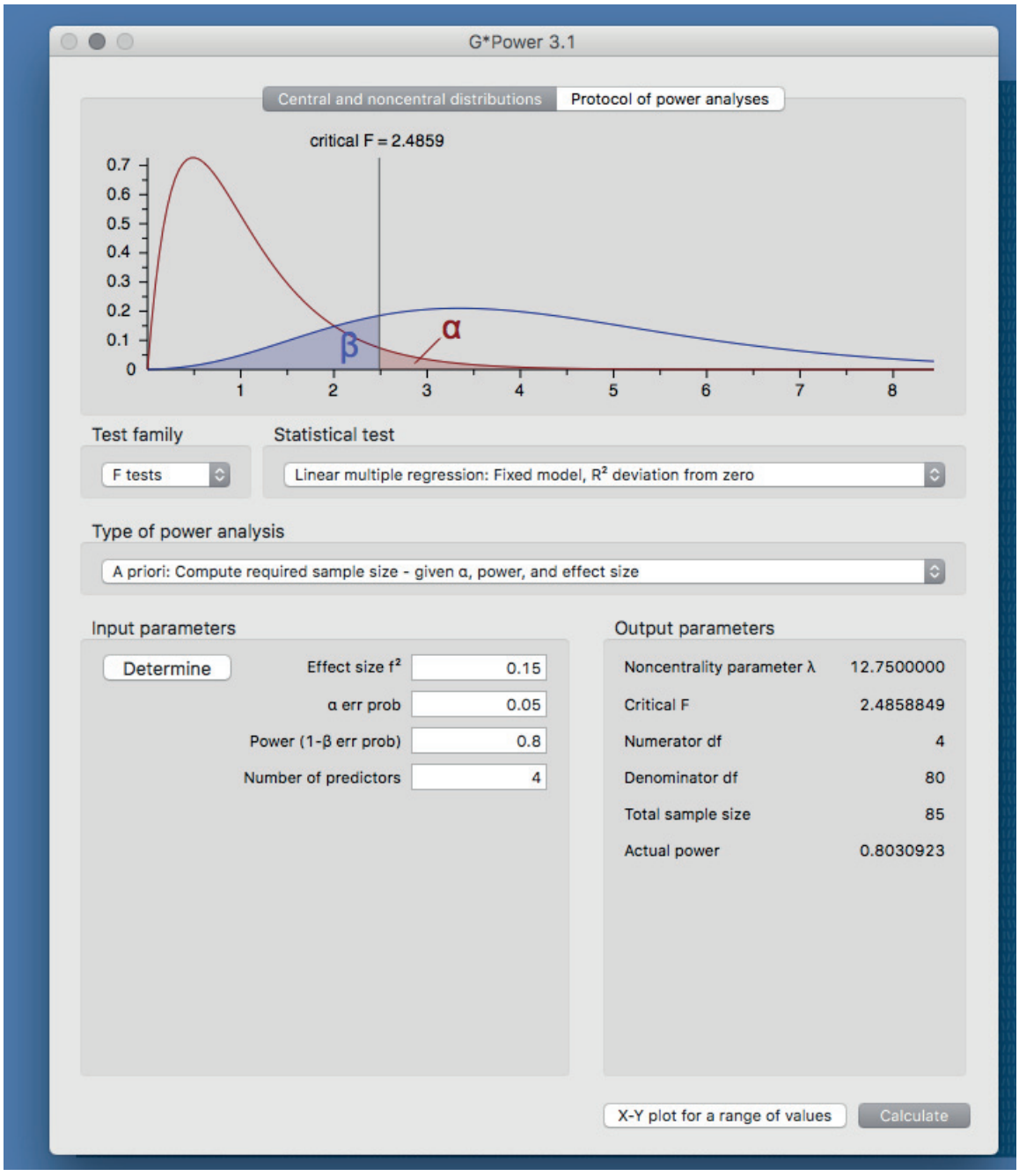
The following 16 statements are about how you feel at school or during your studies. Please read each statement carefully and decide if you ever feel this way. If you have never had this feeling, cross the "0" (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

1. _____ I feel emotionally drained by my studies.
2. _____ I feel used up at the end of the school day.
3. _____ I feel tired when I get up in the morning and have to face another day at school.
4. _____ Studying or attending classes all day is really a strain for me.
5. _____ I can effectively solve the problems that arise in my studies.
6. _____ I feel burned out from my studies.
7. _____ I feel I am making an effective contribution in class.
8. _____ I've become less interested in my studies since my enrollment.
9. _____ I have become less enthusiastic about school.
10. _____ In my opinion, I am a good student.
11. _____ I feel exhilarated when I accomplish something at school.
12. _____ I have accomplished many worthwhile things in my studies.
13. _____ I just want to learn and not be bothered.
14. _____ I have become more cynical about whether my school work contributes anything
15. _____ I doubt the significance of my studies.
16. _____ While studying and at school, I feel confident that I am effective at getting things done.

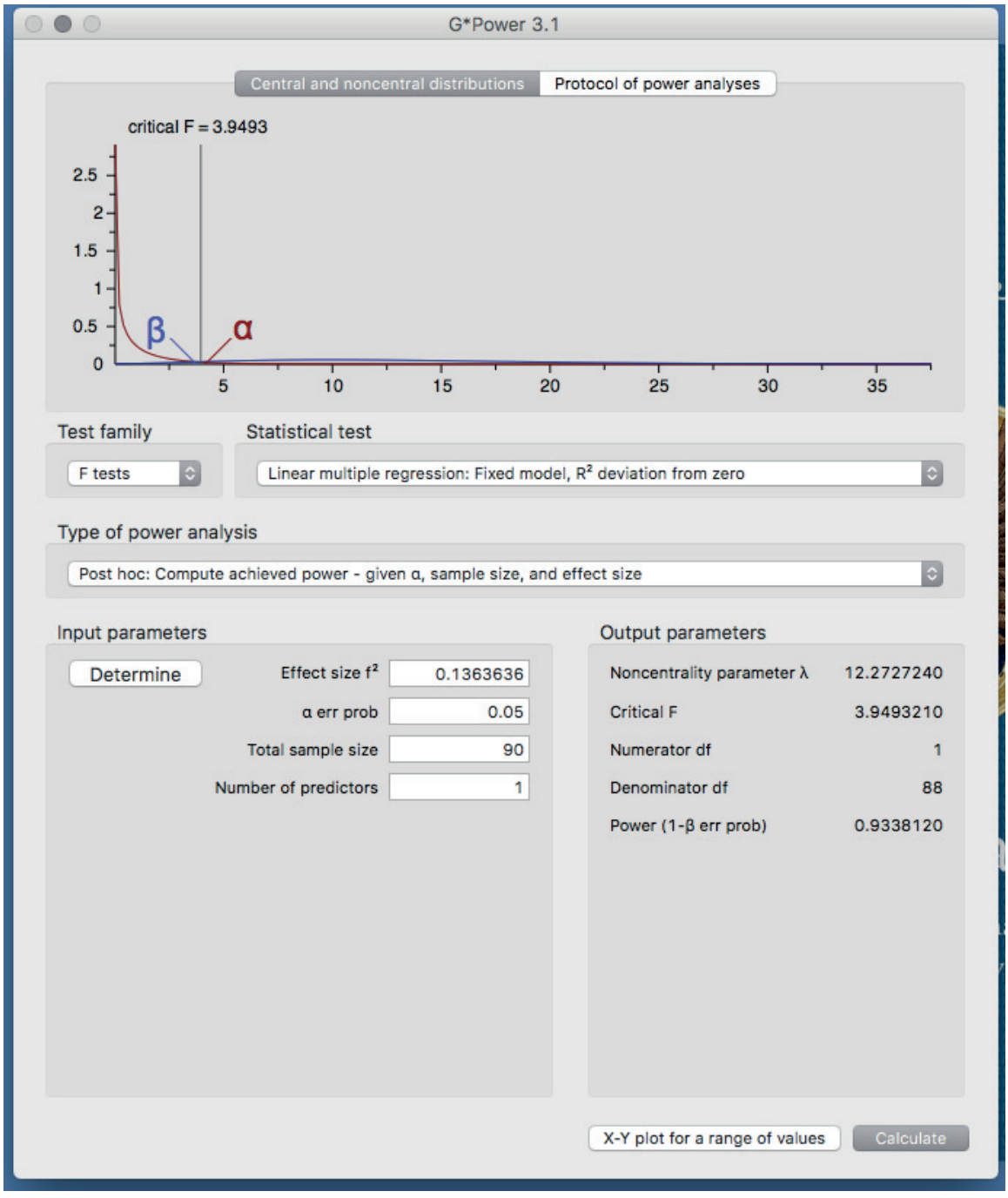
Note: Subscales: (1) Exhaustion (items 1-4, 6); (2) Cynicism (items 8, 9, 13-15); (3) Competence (items 5, 7, 10-12, 16).

Appendix E.

Power Analyses for Sample Size Calculation



Post Hoc Power Analysis for Simple Linear Regression Model



Post Hoc Power Analysis for Multiple Linear Regression Model