2021

# Relationship between Faculty Age, Stress, and Intent to Leave Academic Medical Institutions

Susan Christian Atterton
*Walden University*

# Walden University

College of Management and Technology

This is to certify that the doctoral study by

Susan Christian Atterton

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Chad Sines, Committee Chairperson, Doctor of Business Administration Faculty

Dr. Tim Truitt, Committee Member, Doctor of Business Administration Faculty

Dr. William Stokes, University Reviewer, Doctor of Business Administration Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2021

Abstract

Relationship between Faculty Age, Stress, and Intent to Leave Academic Medical Institutions

By

Susan Christian Atterton

M.B.A., University of Phoenix, 2018

M.H.A., University of Phoenix, 2018

B.S.H.A., University of Phoenix, 2015

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

May 2021

## Abstract

Faculty intent to leave academic medicine affects clinical productivity, patient and teaching service quality, and institutions' profitability. Understanding factors associated with faculty intent to leave is critical for healthcare and human resources leadership within academic medical institutions in efforts to reduce faculty intent to leave. Grounded in Graves' spiral dynamics theory, the purpose of this correlational study was to examine the relationship between faculty age, faculty stress, and faculty intent to leave academic medical institutions. The data were collected and analyzed for 125 faculty physicians with an M.D., Ph.D., D.O., or M.B.B.S. degree in an academic medical institution in the Southeast region of the United States using the Perceived Stress Scale and a self-created intent to leave questionnaire. The results of the binary logistic regression analysis indicated the model containing two predictor variables (age and stress) was not significant. Recommendations for action are succession planning, continuing education and leadership development, hiring additional faculty and administrative support specialist, as well as, promoting effective and transparent communication. The implications for positive social change include the opportunity for leadership to acquire the knowledge to influence a more positive work environment, enhance patient care, and provide knowledgeable new physicians into communities. The growth of academic programs provides collaborative and improved healthcare settings and improves public health initiatives, benefiting employees, patient outcomes, and the community.

# Relationship between Faculty Age, Stress, and Intent to Leave Academic Medical Institutions

By

Susan Christian Atterton

M.B.A., University of Phoenix, 2018

M.H.A., University of Phoenix, 2018

B.S.H.A., University of Phoenix, 2015

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

May 2021

# Dedication

I dedicate this doctoral study to my husband, Kenny. Your unfaltering support, motivation, and encouragement during this study pushed me through long work weeks and sleepless nights. Your patience was invaluable, and I am grateful. I also dedicate this study to my daughter, Katie Grace Emerson. Every time I looked at you through this study, I had the drive to keep going and knew *we* could do this. I hope through this study, I have taught you that you can accomplish anything you put your mind to. I dedicate this work to my parents, Donna, Honey and Jeannie. Honey instilled hard work and commitment. Thank you, parents, for the life lessons. To my sister Jennifer, thank you for listening and your encouragement. Thank you for being proud of me, holding my hand, pushing me over the years, taking on roles you should not have had to, and more importantly, believing I could do this. To my brother Doug, thank you for helping me grasp footing when I needed it. Additionally, my Director, Dr. SS deserves a large portion of dedication for this study. You have been the biggest supporter of my development, personally and professionally. I could not have accomplished this study or even started a doctoral degree without your encouragement and knowing I could do this. Thank you to my department Chair, Dr. WVM – I am grateful for your encouragement and support. To my friend, MKS, thank you for 20+ years of encouragement and, over the last few years, the humor and the listening ear when I needed it most. Your friendship has often pushed me through life and, in most recent years, this study; thank you. Finally, to my few friends, thank you for your encouragement and motivation and for inquiring "how much longer." I hope you are happy to hear, "I'm finished!"

# Acknowledgments

I thank God for His blessings to accomplish this study. Without His mercy and grace, none of this would be possible. God provided me with the determination and strength to embark on this journey and to complete it. Without my faith in God, I would not have completed this journey and achieved this degree.

I want to thank my committee chair, Dr. Chad Sines. Your wisdom and guidance, as well as your honest insight with your mentees, is invaluable. I also want to acknowledge and thank Dr. Tim Truitt and Dr.William Stokes, my other committee members. Their contributions to my doctoral study are indispensable; thank you for sharing your time and expertise. I could not have the growth and development during this process without the three of you – the combination of your knowledge and passion for education is inspiring.

Thank you to my Walden classmates. I have made friends through encouraging one another and prayer and praise and humor. This journey cannot be accomplished alone; those in our class became very important to me. There are several individuals that I would like to thank for their friendships that carried outside of the classroom for study guidance and encouragement.

Table of Contents

List of Tables

List of Figures

# Section 1: Foundation of the Study

Academic medicine faculty intent to leave is a growing problem in the industry. Intent to leave has negative consequences on academic programs, clinical outcomes, peer-to-peer relationships, and individual faculty outcomes (Jeanmonod, 2016). Austin et al. (2017) reported stress and intent to leave as direct correlations in academic medicine faculty physician intention to leave studies. Understanding the causes of faculty intent to leave is vital for healthcare leadership and human resources managers to assist in the improvement of attrition, improvement of academic program profitability, clinical care and outcomes, and individual and peer-to-peer wellbeing (Brod et al., 2017). Furthermore, understanding the causes of intent to leave provides academic medical institutions with a workforce staffed with faculty physicians participating in a tripartite mission contributing to the community with training new physicians through academic programs, modern and cutting-edge research, and clinical care for populations.

## Background of the Problem

Academic medical institutions have many facets of service. Faculty members employed by the academic medical institution are responsible for training incoming physicians that will later provide services to the community (Brueckner-Collins et al., 2018; Smitherman et al., 2019). Academic medical programs are created and utilized for the training of incoming physicians (Brueckner-Collins et al., 2018). Academic medical institution faculty and residents provide clinical services to the community and research programs for extensive research and development, which includes clinical trials in medicine (Smitherman et al., 2019). For many years, academic medicine has experienced

faculty intent to leave, and this has caused severe negative consequences for other faculty, patients, the institution, and the communities (Pololi et al., 2012). Intention to leave is an individual's thoughts or intent to leave their place of employment (Brod et al., 2017; Degen et al., 2015). Faculty intent to leave and turnover has negative financial influences on the institution and the academic programs within academic medicine (Hamidi et al., 2018; Shanafelt, Goh, et al., 2017). Not only the institution and the academic programs suffer, but the community and the patients, as well as, faculty peers also find difficulty when other physicians become disengaged in their commitment to the organization and have the intention to leave (Austin et al., 2017).

## Problem Statement

Faculty intention to leave effects clinical productivity, patient and teaching service quality, and profitability in academic medical institutions (Fatima et al., 2018). Academic medical institutions are at risk of losing faculty at an alarming rate of 68% (Roy et al., 2017). The general business problem is that the increase in faculty intent to leave has negative financial consequences on academic and clinical programs within academic medicine. The specific business problem is that some academic medical institution leaders do not understand the relationship between faculty stress, faculty age, and faculty intent to leave within academic medical institutions.

## Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between faculty age, faculty stress, and faculty intent to leave within academic medical institutions. The independent variables were faculty age and faculty

stress. The dependent variable was faculty intent to leave. The target population consisted of faculty physicians participating in a tripartite mission, specializing in clinical appointments, teaching responsibilities or research duties, and administrative roles employed by an academic medical institution with 767 faculty members in the Southeastern region of the United States. This study may contribute to social change by providing the institution's leadership the data necessary to modify human resource policies to decrease stress levels and the intent to leave for faculty members. These policy modifications can positively affect the profitability of educational programs, clinical outcomes, and research initiatives providing the community with an increase in physicians, well-being initiatives, and a growth in clinical research, which benefits various populations.

## Nature of the Study

A quantitative correlational research design with two independent variables and one dependent variable (see Martin et al., 2019) was the basis of this study. Quantitative research is studying data and emotions, while environments are not acknowledged (Rahi, 2017; Saunders et al., 2015). Shaw (2017) stated quantitative research designs are deductive. Deductive research allows collecting new data from a population and performing statistical tests and testing hypotheses (Rahi, 2017). The quantitative research method was the selected research method over qualitative and mixed-methods research methods. For this study, a survey given to faculty members of an academic medical institution provided new data based on the faculty members' emotions.

Additionally, this study used statistical testing to test hypotheses to answer the research question.

Mixed-methods research has facets of quantitative and qualitative research methods; hence, the name mixed-methods (Yin, 2018). Qualitative research and mixed-methods research methods ask why or how questions (Yin, 2018) for a research study. Qualitative research aspects do not test a hypothesis nor perform statistical tests, which this study did; therefore, the qualitative research method was not appropriate (Yin, 2018). Mixed-methods research comprises quantitative and qualitative research aspects, themes, and statistical testing; and asks why and how questions. Due to the fact mixed-method incorporates quantitative and qualitative elements and asks why and how questions, the mixed-methods research method was not appropriate for this study.

Correlational designs are preferential in organizational studies (Mitchell, 1985) instead of experimental designs or descriptive designs. Price et al. (2015) reported researchers are unable to modify statistical analysis and self-reports, such as questionnaires and surveys, to find the relationship between variables for correlational designs. Using a correlational design requires the researcher to request participants to participate instead of assigning questionnaires to participants (Price et al., 2015). Experimental research designs allow the data to be manipulated by influence, which was not adequate for this study (Stangor, 2011). Last, descriptive research designs do not begin with a hypothesis (Stangor, 2011) and hypotheses testing was necessary for this study. A correlational design was best suited for this study because the data collection was a survey. The data cannot be modified to find a relationship between the variables,

and I tested a hypothesis. To gather data, a one-link email was sent to all academic medical institutions' faculty requesting participation.

## Research Question

What is the relationship between faculty stress, faculty age, and faculty intent to leave academic medical institutions?

## Hypotheses

Null Hypothesis ($H_0$): There is no relationship between faculty stress, faculty age, and faculty intent to leave academic medical institutions.

Alternative Hypothesis ($H_1$): There is a relationship between faculty stress, faculty age, and faculty intent to leave academic medical institutions.

## Theoretical Framework

This study's theoretical framework was the concepts, expectations, and theories based on the research and how the variables linked to one another (Stangor, 2011). The framework for this quantitative correlational study is spiral dynamics. Spiral dynamics originated in the 1950s and 1960s by Clare W. Graves. Graves inquired and analyzed human nature. Spiral dynamics was an appropriate framework for this study because each faculty member of the academic medical institution can assess value systems, the importance of desires, and conflicts within the spiral dynamics hierarchy. I expected the independent variables, stress and age, and the constructs of spiral dynamics to predict faculty intention to leave academic medicine measured by the Perceived Stress Scale and an Intent to Leave Questionnaire.

Spiral dynamics measure positives and negatives, influencing stress levels and an individual's culture through the spiral dynamic framework (Butters, 2015). As individuals age, their cognitive abilities increase, and their abilities to manage stress change (Degen et al., 2015; Girod et al., 2017). Spiral dynamics focuses on the collection of data, the application, and the tiers of the framework. These tiers are (a) automatic, (b) tribalistic, (c) egocentric, (d) saintly, (e) materialistic, (f) personalistic, (g) cognitive existence, and (h) experientialist existence (Butters, 2015). Using spiral dynamics as the foundation of this study allowed me to analyze the faculty's data by having their stress level analyzed to offer suggestions on how to retain faculty based on a multigenerational organization. Furthermore, the spiral dynamics framework evolves through hierarchies based on how individuals think versus what an individual thinks about (Butters, 2015; Ede, 2013; Graves, 1970). The hierarchy perceptions-based thinking changes throughout an individual's life as they age, making this theory ideal for this study.

## Operational Definitions

*Academic medical institution:* Academic medical institutions are the institutions that train medical students, residents, and interns in the practice and philosophy of medicine by faculty physicians and a hospital providing medical services to the community (A.A.M.C., 2019).

*Employee/Faculty retention:* Retention is the employer's ability to maintain employees and/or faculty within their organization by using various methods, such as professional development, salary increase, and improved work-life balance. (Bucklin et al., 2014).

*Faculty stress:* Faculty stress is determined by the stress factors imposed on faculty physicians within academic medicine that is related to faculty responsibilities, quality of life, teaching duties, clinical work, administrative duties, and participation in governance; as well as other leadership duties partnered with academic medicine time commitments, and personal and professional successes (Barnes et al., 1998; Kim, & Rehg, 2018; Lowenstein et al., 2007).

*Intent to leave:* Intent to leave is an individual's thought and intent to resign from their current place of employment (Brod et al., 2017).

*Job satisfaction:* Job satisfaction is the measurement of an employee's happiness with their job, the surroundings of their job, their leadership, and/or specific facets of their job (Shanafelt et al., 2015).

*Job stress:* Job stress is the accumulation of burnout, depression, and overworked individuals (West et al., 2018), as well as the harmful and emotional responses from employees to job requirements (C.D.C., 2018).

## Assumptions, Limitations, and Delimitations

### Assumptions

Assumptions are things accepted to be true without evidence (Scotland, 2012). The first assumption in this study was that the institution's faculty would respond to the survey truthfully and uninfluenced by peers or leadership. The second assumption was that faculty culture and dedication would overcome the academic medicine culture's challenges. The third assumption was that the institution selected employs faculty

physicians with high integrity, and the faculty physicians surveyed will answer all questions on the surveys utilized for the study.

**Limitations**

Limitations affect the validity, causing potential weaknesses and influencing outcomes in the research study outside of the researcher's control, according to Ross and Bibler Zaidi (2019). There were four limitations to this study. The first limitation was the study is a correlational design. Correlational designs do not assume cause and effect, or causation, and a strong correlation could be misleading. Instead, correlational designs provide a prediction of one variable from another variable. Additionally, there could have been a nonlinear relationship, which requires additional research to determine if a curved relationship exists. The second limitation was the population studied. The population was faculty within an academic medical institution. Advanced practitioners and nurses were not included in the research regarding the intention to leave, even though there are multiple studies with results showing further research is necessary regarding these two populations. The third limitation was the environment of the academic medical institution. The faculty work schedules could have caused a limitation due to the tripartite mission because some faculty members work extraneous hours to maintain workloads and training. Access to some faculty proved difficult when requesting participation in the survey. The fourth limitation was that this study surveyed potentially stressed and overworked individuals, with a time limit of 4 weeks to complete. Potentially, the survey could have gone unnoticed due to respondents feeling overworked and did not have the time to complete the survey.

### Delimitations

Delimitations restrain the scope of the study within set boundaries (Edson & Klein, 2017). Boundaries included the location of the population studied, the industry of the population, and the type of population studied. The population was in an academic medical institution in the southeastern region of the United States. The population was faculty physicians with an M.D., Ph.D., D.O., or M.B.B.S. degree and participated in a tripartite mission in the academic medical center.

## Significance of the Study

### Contribution to Business Practice

The study's significance could contribute to the academic medical institutions and healthcare organizations' understanding of the relationship between faculty members' intent to leave based on their age and stress level. Utilizing various instruments to measure stress for employees will provide healthcare organizations the ability and knowledge to modify services or needs for those individuals to reduce their stress and intent to leave. Human resources and leadership teams collaborating to implement new strategies that are necessary and distinctive for departments could allow the organization to provide a more meaningful place of employment (Lim et al., 2017). This modification could potentially reduce faculty intent to leave and increase academic program profitability (Jeanmonod, 2016). These changes would improve the business structure, the quality of employees, and faculty employed by the healthcare organization.

## Implications for Social Change

This study could impact positive social change by providing information regarding challenges faced in healthcare human resources and healthcare leadership. To improve internal and external factors of positive social change, this study could contribute by providing necessary information related to the well-being of faculty members and employees (Ng et al., 2019). Improving the well-being of the institution's footprint through human resources leadership could promote a more positive work environment, enhance patient care, and provide knowledgeable new physicians into communities. Growing academic programs provide collaborative care, improved healthcare programs, and improved influences on public health initiatives, all of which benefit employees, patient outcomes, and the community (Daniel et al., 2018).

## A Review of the Professional and Academic Literature

To conduct the literature review, the following databases and search engines utilized were Google Scholar, ProQuest Central, and ProQuest Health and Medical Collection, Emerald Insight, A.B.I./Inform Collection, MEDLINE, BioMed Central, Business Source Complete, as well as, The Chronicle of Higher Education, the Cochrane Database of Systematic Reviews, and Free Medical Publishers. The terms and keywords used in the search were *faculty intent to leave, faculty stress, faculty age, physician intent to leave, physician stress and age, physician age, faculty turnover, dynamic spiral theory and transformational leadership theory*, and *participative leadership theory*.

**Table 1**

*Summary of Sources in Literature Review*

| Reference Type | Count | Percentage |
|---|---|---|
| Peer-Reviewed Journals with 5-years of 2020 | 115 | 59% |
| Peer-Reviewed Journals more than 5-years of 2020 | 50 | 25% |
| Books within 5- years of 2020 | 8 | 4% |
| Books more than 5-years of 2020 | 11 | 6% |
| Government Websites | 12 | 6% |
| Total | 196 | 100% |

The literature review consists of many topics; these various topics are the theoretical framework-spiral dynamics theory and the rival theories Maslow's hierarchy of needs and McClellands learned needs theory. Additionally, the independent variables of stress and age and the dependent variable of intent to leave are discussed. The appropriate scales of measurement are discussed; the Perceived Stress Scale and survey questionnaire Intent to Leave are addressed in detail throughout this literature review. Last, the end of the section includes a literature review synopsis and transitions to the next section.

## Applied Business Problem

The purpose of this quantitative correlational study was to examine the relationship between faculty age, faculty stress, and faculty intent to leave within academic medical institutions. The independent variables were faculty age and faculty stress. The dependent variable was faculty intent to leave. The target population

consisted of faculty physicians participating in a tripartite mission, specializing in clinical appointments, teaching responsibilities or research duties, and administrative roles employed by an academic medical institution with 767 faculty members in the Southeastern region of the United States. This study may contribute to social change by providing the institution's leadership, the data necessary to modify human resource policies to decrease the level of stress, and the intent to leave for faculty members. These policy modifications can offer a positive effect on the profitability of educational programs, clinical outcomes, and research initiatives providing the community with an increase in physicians, well-being initiatives, and a growth in clinical research, which benefits various populations.

## Spiral Dynamic Theory

The spiral dynamic theory was the framework used for this study. Clare W. Graves created spiral dynamic theory as an opportunity for understanding and insight into personal development (McDonald, 2010). In 1952, Dr. Graves began his research with findings that individuals fall into two categories, deny self-category and express self-category. As Dr. Graves moved forward with his research, the results were slightly modified, influencing his theory changes. The final results showed that individuals changed with age and emerged into their own progressive needs as they matured (Graves, 1970; McDonald, 2010). Graves' spiral dynamic theory initially was created with seven layers; however, 20-years later evolved to an eight-level theory (Butters, 2015).

According to Butters (2015) and Ede (2013) the eight levels that comprise spiral dynamics are (a) automatic, (b) tribalistic, (c) egocentric, (d) saintly, (e) materialistic, (f)

personalistic, (g) cognitive existence, and (h) experientialist existence. Furthermore, spiral dynamics is relevant to (a) leadership, (b) conflict management, (c) organizational change, (d) communication and marketing, (e) working in diversity, and (f) cultural transformation. Ede (2013) stated it is imperative to realize the spiral dynamics theory has a vast difference in thinking systems: how people think about things and the things people think about. The spiral dynamics theory focuses on the environment and the individual. Each individual perceives his/her environment differently from another individual (Graves, 1970; McDonald, 2010). An individual moves through the spiral dynamics hierarchy system based on their values systems and how the individual adapts throughout the years to change (Graves, 1970).

Studying the relationship of faculty age, faculty stress, and faculty intent to leave will apply spiral dynamics theory through the data analysis by utilizing (a) automatic, (b) egocentric, (c) materialistic, (d) personalistic, (e) cognitive existence, and (f) experientialist existence levels of the theory. According to Graves (1970), spiral dynamics theory is appropriate for individual behaviors and perceptions because the theory shares a perspective of relationships and culture while coinciding and running parallel with Maslow's hierarchy of needs. However, during the debate between Maslow and Graves, Graves was able to add the eighth and final level to his theory (Butters, 2015), showing an open dynamic that allows for further growth (Graves, 1970). During the debate between Maslow and Graves, Maslow deemed Graves' theory superior to his theory, Maslow's Hierarchy of Needs (1970; Beck & Cowan, 1996; Graves, 1970).

Ede (2013) also stated spiral dynamics focuses on the response individuals have to circumstances and their coping abilities to ambiguity and uncertainty. Thus, there is a positive and a negative to all levels of spiral dynamics theory (Butters, 2015; Ede, 2013; Graves, 1970). Applying the various levels of spiral dynamics and how they relate to individuals and their thinking assists professions in dynamic psychological evolution (Ede, 2013; Graves, 1970); this provided another opportunity to utilize spiral dynamics as the foundation of this study. Testing the hypotheses to answer the research question, is there a relationship between faculty stress, faculty age, and faculty intent to leave would be possible through the evolution of the hierarchy evolution of spiral dynamics.

Furthermore, it is imperative to discern that each person would move through the levels of spiral dynamics at their own pace (Beck & Cowan, 1996; Graves, 1970). Beck and Cowan (1996) and Graves (1970) stated the automatic level of spiral dynamics is biology-driven and is a sensory level. Additionally, individuals that are operating at the automatic level are under stress and/or shock and are seeking satisfaction. Beck and Cowan (1996) continued to state the egocentric level displays power impulses and immediate sensory satisfaction. The individual at this level is spontaneous and daring at times. Occasionally, individuals in the egocentric level are asserting themselves to dominate others and seek control, otherwise, to gain power (Beck & Cowan, 1996). Others may see individuals in the egocentric level as impulsive and robust; however, these individuals seek meaning and a purpose in life. Individuals in the materialistic/achiever level of spiral dynamics are success-driven, according to Beck and Cowan (1996). These individuals continue to seek the most advanced answers and ways

to advance their professional and personal lives. They are goal-oriented and explore strategies to do better (Beck & Cowan, 1996; Graves, 1970). Beck and Cowan (1996) reported individuals at this level are resourceful and bring success to themselves and others. Individuals at the materialistic/achiever level can provide themselves and others with opportunities for success, influences to achieve, and competition to grow (Beck & Cowan, 1996). The next level the individual progresses to is personalistic. The personalistic level is the individuals' opportunity to gather acceptance from those around themselves (Beck & Cowan, 1996). Occasionally, the individual may place their interest on hold while becoming absorbed in the interests of those around them to gain popularity. (Beck & Cowan, 1996).

These influencing behaviors and traits are solid reasons that spiral dynamics was the theory used for this study. Organizations that employ individuals with strong personalities that seek growth are competitive in the industry/market. Academic medical institutions require development to be competitive (Konstam et al., 2017). The institutions seek faculty that are dedicated, influencers for his/her self and those around them, and are goal-oriented (Haras et al., 2017). The levels within spiral dynamics allow others to view individuals through the stages of personal and professional growth.

**The Levels of Spiral Dynamics**

The levels of spiral dynamics utilized in this study (a) automatic, (b) egocentric, (c) materialistic, (d) personalistic, (e) cognitive existence, and (f) experientialist existence. The previously mentioned levels of spiral dynamics will evaluate academic medical institution faculty members' professional lives through cognitive growth.

Through appropriate data analysis and hypotheses testing based on stress, age, and intent to leave through the faculty of an academic medical institution's cognition, the research question can be answered.

### *Automatic*

The automatic level of spiral dynamics theory is apparent through an individual's motivation by survival and environmental imperatives (Beck & Cowan, 1996; Butters, 2015; Southwick et al., 2014). Faculty of an academic medical institution relate to this level of theory through their self-consciousness and high achiever behavior (Crouzevialle et al., 2015). The behavior, as mentioned above, provides the faculty member with a dedication to self and the success of the institution (Beck & Cowan, 1996; Ede, 2013; Gibson et al., 2014), resulting in survival. The survival of faculty maintains and improves the success of academic programs, longevity, and financial wellbeing of the institution (Dandar et al., 2019). Survival behavior is intentional and is competitive (Beck & Cowan, 1996; Donkers, 2016) for many. Working in academic medicine requires faculty physicians to work in close quarters with their peers (Lucas et al., 2018), as well as, provide structure, efficient and effective mentoring with one another, and is cost-effective for multiple departments (Clark et al., 2018). Faculty members work closely with peers, which requires each faculty member to know their specialties, stay up-to-date on their continuing education credits, and work with and/or act as a leader as frequently as possible (Lucas et al., 2018).

### *Egocentric*

The egocentric level of spiral dynamics theory is expelled through a person's individualism and the force to acquire desired objects (Beck & Cowan, 1996; Butters, 2015; Graves, 1970; Han & Humphreys, 2016). The faculty members of an academic medical institution focus on their own needs, self-interest, and self-protection personally and professionally (Liang et al., 2016; Lindfelt et al., 2018), through self-esteem and a desire to self-protect (Liang et al., 2016), as well as, ethical judgments (Albert et al., 2014). To be egocentric requires rules to follow; however, the individual must follow the institution's policies, removing a sense of autonomy (Thomson, 1998). A faculty member's values and behaviors (Donkers, 2016) promote their success through their cognitive development of value systems (Beck & Cowan, 1996; Donkers, 2016; Lucas et al., 2018).

***Materialistic***

Authoritarianism results from the level of materialistic needs for individuals (Beck & Cowan, 1996; Butters, 2015). Deckop et al. (2015) stated that being materialistic in an organization has adverse reactions to employees' wellbeing. Individuals seek success, results, influence over others, and autonomy (Beck & Cowan, 1996; Ede, 2013). Organizations may find their employees' materialistic behavior as a benefit (Deckop et al., 2015). This benefit provides the institution with ambitious personality types who push forward with organizational goals (Deckop et al., 2015); however, it negatively affects employee relationships (Deckop et al., 2015). This type of behavior could potentially harm academic programs, also (Deckop et al., 2015; Lucas et al., 2018).

Materialistic behaviors may result in unprofessional practices within academic medicine, according to Hafferty (2017). Academic medicine may find professional dominance with the materialistic level of spiral dynamics theory; however, for medical professionals to push forward with their desires will also benefit the community with accountability while serving one another and serving the patient. (Hafferty, 2017; Quaintance et al., 2010).

The scarcity hypothesis and socialization hypothesis (Knutsen, 1990) are pertinent in the materialistic stage of spiral dynamics. As an economic theory, scarcity hypothesis lowers the priority as specific needs are met, causing values to conflict (Knutsen, 1990; Lucas et al., 2018). As the scarcity hypothesis affects individuals, the socialization hypothesis modifies socioeconomic factors, which would have a delayed influence on the organization and academic programs (Deckop et al., 2015; Knutsen, 1990). Socioeconomic factors influence individuals and their materialistic instincts in their cognitions (Manstead, 2018).

***Personalistic***

Individuals on the personalistic level are interested in belonging with others and maintaining concern and relationships with other individuals (Beck & Cowan, 1996; Butters, 2015; Jeffers & Mariani, 2017). Systems approaches provide the hierarchy of importance for personal and professional relationships in higher education (Kim & Rehg, 2018). Personal and professional relationships provide faculty of institutions with increased morale and performance abilities (Kim & Rehg, 2018). The potential for an increased level of morale and performance improves the institution's academic programs,

clinical services, research, and peer-to-peer relationships. Additionally, the personalistic level of spiral dynamics relates to individual humanistic oriented behaviors (Beck & Cowan, 1996; Melé, 2016). Building personal relationships with patients is another method faculty members exhibit personalistic behavior (Quaintance et al., 2010). The relationships built with patients can help reveal human behavior or humanism, which is beneficial for peers and residents to see in a provider (Quaintance et al., 2010). Melé (2016) stated humanistic behaviors demonstrated through (a) wholeness, (b) comprehensive knowledge, and (c) dignity are in the personalistic tier. Also, (a) development, (b) common good, (c) transcendence, and (d) stewardship-sustainability are in the personalistic level (Melé, 2016). Faculty physicians in academic medicine must use the aforementioned humanistic behaviors to maintain relationships with their peers and remain in the hierarchy of the organization (Albert et al., 2014; Langstedt, 2018; Melé, 2016; Quaintance et al., 2010).

***Cognitive Existence***

Cognitive existence can have a threshold of humanity (Beck & Cowan, 1996; Butters, 2015; Manstead, 2018). Gunasingam et al. (2015) stated faculty and interns must overcome challenges and stresses within academic medicine. Utilizing debriefing sessions as a strategy could potentially allow providers to maintain a sense of control for emotional and social support (Gunasingam et al., 2015; Karnieli-Miller et al., 2010). Pololi et al. (2009) and Karnieli-Miller et al. (2010) reported faculty within academic medicine found positive relationships were prevalent with patients and peers when culture, humanity, and leadership were at the forefront of the institution. Faculty has

often felt increased emotional intelligence training can provide a better foundation for cognitive existence within the workplace (Taylor et al., 2011). Further stated by Kok et al. (2013) and Manstead (2018), relationships with others promote positive outcomes and better self-needs awareness. Maintaining stable decision behavior, monitoring, and control over one's cognitive abilities (Jackson et al., 2016; Manstead, 2018) ensures each faculty is aware of their strategies benchmarking decision performance (Jackson et al., 2016). Strategies and benchmarking are critical in optimal clinical care performance, successful patient outcomes, and academic programs (Gunasingam et al., 2015).

### *Experientialist Existence*

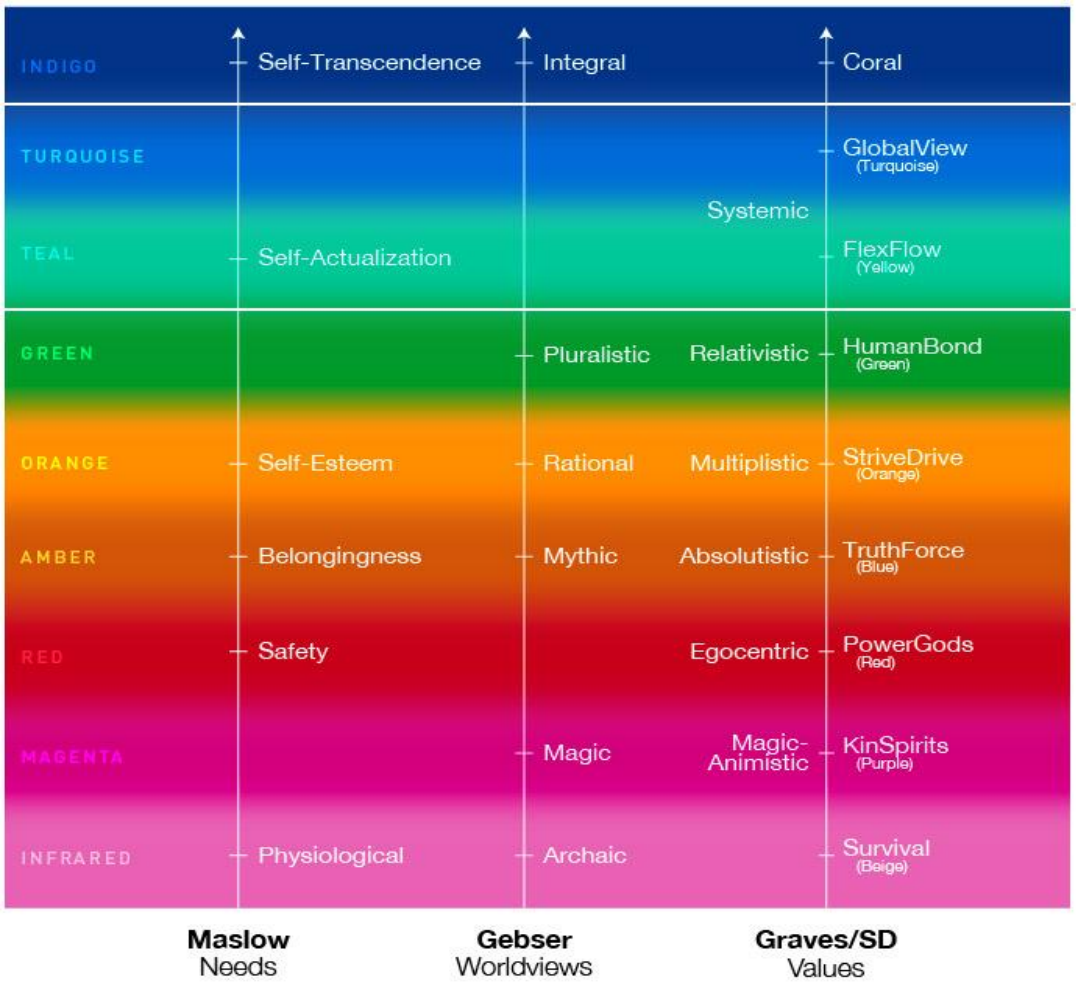
Experientialist existence has an internal drive to make life stable (Beck & Cowan, 1996; Butters, 2015). Positive emotions and physical health are focal for individuals to have a stable internal existence (Kok et al., 2013) and experience flawless well-being and prosperity (Fredrickson, 2001). This stability affects an individual's relationship with others, health outcomes, and self-generating emotional positivity (Kok et al., 2013). Additionally, contributions to a diverse population and building relationships with those of diversity have impacted individuals in a positive element (Beck & Cowan, 1996; Kok et al., 2013; Manstead, 2018). Stable and diverse relationships have further shown vagal activation is more significant when involved in stable and supportive environments (Kok et al., 2013; Manstead, 2018; Pololi et al., 2009).

This hierarchy level is significant in academic medicine because stability, positivity, and stable wellbeing directly influence oneself and those around them. In turn, this could impact academic programs, community partnerships, training of young

physicians, and patient-physician relationships through professionalism, ethical frameworks, and support from one another (Wynia et al., 2014).

**Figure 1**

*Levels and Color Schemes of Spiral Dynamics Theory*




*Note*. This color scheme reveals the hierarchy an individual moves through cognitively as they age and through their life progression. From "A Brief History of Spiral Dynamics" by A. M. Butters, 2015, Approaching Religion, 5(2). Permission to use image Appendix A.

## Rival Theories

There are other theories available as the foundation of this study that has ethical principles of business, materialistic, humanistic claims, and are needs-based. Graves received recognition for his theoretical research; however, he received criticism for his data collection methods. He often used students as test subjects without their knowledge, used two-way mirrors, and used tape recorders to spy on them (Butters, 2015). Graves's graduate students Beck and Cowan supported the theory, continued his research, built on it, and elaborated on it (Beck & Cowan, 1996; Butters, 2015; Ede, 2013). Other possible approaches based on ethical principles for this study's foundation were Maslow's hierarchy of needs, and the other was McClelland's learned needs theory. The hierarchy of needs theory has often been used for organizational behavior demands and in the management of others (Acevedo, 2015; Lee & Raschke, 2016). McClelland's learned needs theory focused on employees' achievement, affiliation, and power.

### *Maslow's Hierarchy of Needs*

Maslow created the five stages of human needs in 1943 (Acevedo, 2015). Abraham Maslow's hierarchy of human needs is widely accepted research and organizations, even though there is a lack of empirical evidence to support his theory (Bridgman et al., 2017; Huitt, 2007). Maslow's hierarchy of needs has received criticism for the intuitive appeal, limitations of the hierarchy, and a lack of empirical support (Bridgman et al., 2019; Shahrawat & Shahrawat, 2017). Maslow and Graves agreed their theory to be rivals, as Maslow stated Graves's theory to be superior to his own (Maslow, 1987). Additionally, Maslow's hierarchy of needs is a rival to spiral dynamics due to the

rejection of focus on the inner focus of thoughts and satisfaction of needs and desires, such as spiral dynamics.

Maslow's hierarchy of human needs begins at the bottom and advance to the next level as the individual wants to reach a higher hierarchy. The levels within Maslow's hierarchy of needs consist of physiological, safety, love/belonging, esteem, and self-actualization. The physiological level is the base of the hierarchy and consists of food, water, and rest. The second level is safety and consists of security. Love/belonging is level three and consists of intimate relations, friends. Level four is esteem; esteem is the feeling of accomplishment. Level five is at the top level and is self-actualization. Self-actualization is to achieve one's full potential.

Physiological needs are the biological requirements for survival. The need for survival is the human requirement for shelter, air, food, water, warmth, intimacy, sleep, clothing, etc. (McLeod, 2018; Maslow, 1987). These items are necessary for individuals to feel functional (McLeod, 2018). Safety needs are the required stability needed for individuals, the safety of nature's elements, security and protection, law and order within their lives, and safeguarding from fear (McLeod, 2018; Maslow, 1987). Meeting love and belonging gives individuals the required emotional attachments and interpersonal relationships that promote intimate behaviors. Intimate behaviors relate to family and friendships through trust, sexual intimacy, acceptance, and giving and receiving love (McLeod, 2018; Maslow, 1987). Esteem for oneself and esteem for others is another level. The hierarchy is broken down into the categories, as mentioned above, because of respect and dignity (McLeod, 2018). Lastly, self-actualization is self-fulfillment (i.e.,

personal growth; McLeod, 2018; Maslow, 1987). Maslow's fifth level in his hierarchy was the peak of his theory and promoted the "desire to become everything one is capable of becoming" (Maslow, 1987, p.64).

Maslow's hierarchy of needs can satisfy employees by providing the requirements to assist in meeting the needs, i.e., stable income for food, shelter, clothing, benefits packages that will fit an employee's safety needs, and job security. An organization that has created a culture of respect may satisfy the employees' need for belonging within the organization; achievement awards will meet the self-esteem needs. Lastly, professional development plans and continuing education provide employees with the self-actualization need. While there are ways for organizations to meet the needs of Maslow's hierarchy, Maslow's hierarchy of needs has been intended for the individual to provide the growth from level to level (Huitt, 2007).

Maslow's hierarchy of needs was not the appropriate theory for this study because the approach focused on the individual's moving from level to level without focusing on learning, culture, or inner thoughts (Shahrawat & Shahrawat, 2017). I found this theory not intertwined with organizational needs, practices, or growth, as well as the faculty's inner perceptions and development as I would have preferred in this setting. Maslow's hierarchy of needs is an excellent theory for human behavior studies and other studies such as.

### *McClelland's Learned Needs Theory*

McClelland's learned needs theory, developed in the 1960s, was created based on achievement, affiliation, and power. McClelland (1985) determined these characteristics

to be learned behaviors or motivators. Khurana and Joshi (2017) stated behaviors and motivation is the responsibility of leadership within organizations, whereas spiral dynamics theory stated the advances through the hierarchy is the obligation of the individual through their cognitions (Beck & Cowan, 1996; Butters, 2015; Ede, 2013).

Rybnicek et al. (2019) reported McClellands learned needs theory is foundational in an employee's personality-based approach to work motivation, as this theory is primary in management and organizational behavior. Higher priced corporate rewards provide more committed employees to the organization (McClelland, 1987; Rybnicek et al., 2019). Rybnicek et al. (2019) stated organizations benefit from motivating employees to drive competition among the employees for organizational benefits. McClelland (1985) reported 75% of employees' motivators are related to the influences of organizational benefits. McClelland's needs theory allows managers and leadership to place employees in jobs that motivate employees based on the incentives available (Liu & Arendt, 2016; Rybnicek et al., 2019).

Andersen (2018) reported management and leadership have motivation profiles, which correlate well within the McClellands needs theory. Patterns in behavior could explain the reasons for the responses to situations, according to McClelland's theory. Organizational effectiveness has improved in various business sectors, depending on manager behavior (Andersen, 2018; Sihag & Rijsdijk, 2018). Furthermore, Sihag and Rijsdijk (2018) stated that control functioning affects other forms of control in organizational performance and professional relationships.

McClelland's needs theory has a foundation that states a lack of awareness (Ferreira, 2017; McClelland, 1985), which perception and a firm cognition were necessary for this study. Furthermore, McClelland's theory was not appropriate for this study because the faculty of an academic medical institution are employees through the public sector, and McClelland's philosophy is best suited for the private sector (Ferreira, 2017). Lastly, the public sector employees seek influences through interpersonal relationships, personal goals, and control of their situations (Beck & Cowan, 1996; Gibson et al., 2014).

## Measurement

Saunders et al. (2015) reported measurements are methods used in data collection, must be clearly understood, and are an analytical procedure for quantitative research. Business research often uses multiple data collection measures (Saunders et al., 2015) and uses specific populations for valid and reliable studies (Ponto, 2015). Surveys are either in print or administered verbally to a sample (Weisberg et al., 1996) or online (Lindemann, 2019). Dandar et al. (2019) stated depending on which instruments are used and the number of devices used in a study for data collection will impact the level of intent to leave, burnout, and stress. The instrument selection is tedious because researchers select instruments that participants can report about themselves regarding the study topic (Dandar et al., 2019; Ponto, 2015; Weisberg et al., 1996).

### Survey Type and Designs

Survey research is the method of data collection from individuals, also known as a sample, through responses to questions (Ponto, 2015; Weisberg et al., 1996), through

factual information of the participants (Cohen et al., 2017). Surveys allow the researcher to have more control over the process and potentially influence the cost savings of the data collection by surveying a sample instead of the requirement to survey an entire population (Saunders et al., 2015; Weisberg et al., 1996). With this study, I deployed survey instruments to collect data.

Utilizing various types of surveys, allows the researcher to recruit participants, select instruments, and collect data (Ponto, 2015; Weisberg et al., 1996) based on the hypothesis of the study. Surveys are specific, allowing researchers to select the survey based on the need of the study (Weisberg et al., 1996), such as opinion, activity, emotions, etc. (Dandar et al., 2019; Saunders et al., 2015; Weisberg et al., 1996). Cohen et al. (2017) reported survey-based research provides data on various levels, such as an individual level, the group level, or an institutional level to describe, compare, and contrast the data collected. Furthermore, analyzing and interpreting the data could provide various themes to evolve in the data, according to Cohen et al. (2017). I used the perceived stress scale (Cohen, 1988) and an intent to leave questionnaire to conduct my research for this study.

### *The Perceived Stress Scale*

The Perceived Stress Scale (P.S.S.) is authored by Sheldon Cohen and hosted by mind garden. This instrument intends to measure the perceived level of stress (Cohen & Williamson, 1988) of the individual completing the survey. This instrument has been tested and is valid and reliable in community samples. Wong et al. (2018) studied 36 emergency medicine faculty physicians in an academic medical center. The P.S.S.

adequately measured faculty stress level in a healthcare setting and the demands of the faculty career (Wong et al., 2018). Wong et al. (2018) reported stress is detrimental to the career longevity of a faculty member, as well as decision-making and patient care.

Valosek et al. (2018) reported the P.S.S. measures emotional intelligence and perceived stress, mental and physical health, and organizational health. Through the study conducted by Valosek et al. (2018) results showed government employees could benefit through organizational emotional intelligence wellbeing programs. The study analyzed 96 staff members over four months.

Mitra et al. (2018) used the P.S.S. to determine a correlation between perceived stress, emotional intelligence, and burnout. The study had 63 participants; the results of the study showed a relationship between stress and burnout; however, emotional intelligence levels influenced the level of burnout. Lastly, the study results showed the higher the emotional intelligence, the lower the level of burnout; therefore, the lower the level of perceived stress (Mitra et al., 2018). Overall, using the P.S.S. provides researchers the data of a perceived stress level of a population.

***Intent To Leave Questionnaire***

Dandar et al. (2019) studied a sample from 13 institutions, which received 7,653 full-time faculty members in academic medicine. The survey collected data through the Association of American Medical Colleges (A.A.M.C.) between January 2016 and September 2018. Results from the survey showed, faculty with at least one symptom of stress, or at least one symptom of burnout were at an increased risk of intent to leave. Of those individuals surveyed, 41% of the individuals that experienced stress and/or burnout

reported intention to leave. Bucklin et al. (2014) found out of 139 faculty, 33% of new faculty resigned within three years and 27% were intending to resign within five years, due to a decrease in career satisfaction.

Including an intent to leave a questionnaire for this study posed the following questions:

"What is your gender?" and the option to answer "male," "female," or "other."

"What is your age?" and the opportunity to choose "30-34", "35-39", "40-44", "45-49", "50-54", "55-59", "60-64", "64-69", "70+", and "choose not to answer."

"Do you have intent to leave?" and the option to answer "yes" or "no."

If the above question was answered "yes," the next question was, "What is your reason for intention to leave the institution?" Next was "When do you intend to leave the institution?". Both of the questions mentioned above have multiple choice answers with a "choose not to answer" option. "What is your reason for intention to leave the institution?" had options that have been linked to other studies, such as "retirement," "career advancement," "lack of administrative support," "lack of support from leadership," "other career opportunities," and "other."

If the answer was "no" to "Do you have intent to leave," the survey proceeds to the following questions.

"What is your faculty rank?" and a multiple-choice option to answer for various levels of faculty within an academic medical institution.

"How many years of service do you have at this institution?" and the option to choose between several different selections of years of service.

"How many hours a week do you work?" this option allowed the participant to enter the number of hours worked per week

"Work Duty (effort percentage)?" ranking based on the categories of "research/scholarship," "clinical," "teaching/instructional," "service," "administration," "other."

Many researchers have utilized questionnaires to measure questions regarding tenure, rank, and years employed with an institution (Chen et al., 2013).

## Variables: Age, Stress, and Intent to Leave

### Variables: Age and Stress

Lu et al. (2017) reported stress and age are direct predictors in a physician's intent to leave their institution. For decades studies have been completed on the relationship or the cause and effect of age and stress and intention to leave academic medicine (Barnes et al., 1998; Bayl-Smith & Griffin, 2014; Conley & You, 2013; Dewa et al., 2014; Heponiemi et al., 2018; Lu et al., 2017; Rittenhouse et al., 2004; Volkert et al., 2018; Vong et al., 2018). As of 2017, the average age of male physicians was 49.3 years of age, and the female average physician age was 42.7, according to the physicians and surgeons data website (2019). Age and stress influence an individual's ability to function productively in healthcare. Gunasingam et al. (2015) found the younger the provider, the higher the level of stress. With age, providers become more in tune with themselves and able to manage their levels of stress (Graves, 1970).

#### *Age*

Physician ages vary in medicine. Age appears to be an influencer to stress according to the literature for faculty in academic medical institutions. In several studies, age is a predictor of stress. Girod et al. (2017) had a mean age of 45 years (137 faculty members); Bayl-Smith and Griffin (2014) had a mean age of 53.21 years out of 208 study participants (faculty members); Degen et al. (2015) had a mean age of less than 35 with a participant size of 5,461. In the studies mentioned above, age and stress have a direct correlation, and there was a difficulty for faculty participating in tripartite missions in academic medicine (Bayl-Smith & Griffin, 2014; Degen et al., 2015; Girod et al., 2017). Tur et al. (2016) had a mean of 31 years out of 108 physician participants. Degen et al. (2015) cited many other studies with ages ranging from 30 years of age to over 65 years of age, all with correlations of stress and burnout.

The traditional education track to become a physician is high school graduation at 18 years of age, undergraduate school completion by 22 years of age, or 23 years of age. After undergraduate school, the individual must attend medical school (A.A.M.C., 2019); this is another four years of school, increasing the individual's age to 26 years or 27 years of age. After medical school, the individual must match with an institution for residency, depending on the specialty; the individual may have between four and six years of clinical training (A.A.M.C., 2019). After the individual finishes clinical residency training, their age increases for the individual to 30 years or 32 years. Lastly, the individual may do a fellowship of one or two years before becoming faculty or entering private practice. By the time an individual is ready to become a physician, they could be

30-32 years of age, if they graduated high school at 18 years old and did not attend an accelerated program (A.A.M.C., 2019).

The age of faculty in academic medical institutions may influence the individuals intent to leave academic medicine. This study used age as a variable to test the hypothesis and investigate whether age was a predictor of intent to leave academic medicine. Reducing intent to leave ensures retaining faculty, providing high-quality care, advancing research, and productive and profitable programs (Brod et al., 2017).

***Stress***

Levels of stress vary and become influenced by various predictors. Girod et al. (2017) found stress for faculty to consist of a lack of satisfaction with leadership and institutional support. Faculty members have many roles in academia; therefore, the support from leadership and the institution is critical in the success of faculty, professionally and personally. Individuals employed in academic medical institutions struggle between perceived control over their lives and a desire for control over their lives (Hornsey et al., 2019).

Academic medical institutions rely heavily on faculty members (Brod et al., 2017). Faculty with clinical appointments, educational duties, and research requirements provide expertise and have a positive influence on academic programs, patient care, and a plethora of other facets (Brod et al., 2017; Bucklin et al., 2014). Additionally, faculty members with administrative duties added to their roles face an increase in stress and time constraints (Brod et al., 2017; Bucklin et al., 2014). The cost of faculty loss on an institution is colossal on the institutions (Hamidi et al., 2018; Shanafelt, Goh, et al.,

2017); however, the negative impact is just as large on peers, other faculty, and patients (Benjamin, 2018).

Tur et al. (2016) found stress and psychosocial risk factors, as well as occupational stressors as significant variables in academic medicine physicians. Heponiemi et al. (2018) reported occupational stress directly related to insufficient functioning information technology systems, inadequate training on electronic health record systems, and general health information systems in healthcare systems. Physicians have emotional and cognitive burdens regarding their patients (Tur et al., 2016). Concerns such as physician shortages, poor work-life-balance (Lu et al., 2017; Shanafelt, Dyrbye et al., 2017), excessive or lack of productivity and motivation, and many other variables add to the stress of day-to-day life in physician professions (Lu et al., 2017; Shanafelt, Dyrbye, et al., 2017).

Brown et al. (2016) stated physicians in academic medicine are at risk because of the demands of their jobs. Tur et al. (2016) did not find a difference between specialties and the level of stress; however, Gunasingam et al. (2015) found the younger the provider, the higher the level of stress. Physicians have difficulty balancing personal relationships (Brown et al., 2016; Clark et al., 2018), they also experience an unsatisfactory quality of life, and poor job satisfaction (Brown et al., 2016; Clark et al., 2018; Girod et al., 2017; Lu et al., 2017). Hammig (2018) stated physicians repeatedly report hazardous working hours, dangerous working conditions, extreme workloads, and occupational and psychosocial hazards, such as long and irregular hours, physical burdens, emotional pressures, social and role conflicts, and understaffing.

***Burnout Leading to Stress***

Various levels of stress may lead to other syndromes, one prevalent among medical providers: burnout (Dyrbye & Shanafelt, 2016; Hamidi et al., 2018; Shanafelt, Goh, et al., 2017). According to Butcher (2018) burnout is caused by environmental factors. Burnout comprises depersonalization, significant emotional exhaustion, and diminished personal accomplishments (Butcher, 2018; Dyrbye & Shanafelt, 2016; Dzau et al., 2018; Gunasingam et al., 2015; Rakofsky et al., 2018). Shanafelt, Dyrbye, et al. (2017) stated burnout leads to inefficiency and ineffectiveness at work. Because of high achieving behaviors within academia (Crouzevialle et al., 2015) this becomes difficult for providers that strive for personal and professional excellence (Crouzevialle et al., 2015). Kim and Rehg (2018) stated faculty workload and faculty morale coincide with burnout and stress. However, faculty find autonomy and intellectual milestones significant, even though the benefits, as mentioned above, are occasionally the result of stress (Kim & Rehg, 2018).

Rakofsky et al. (2018) found 21.6 % of 54 participating physicians scored a "high exhaustion" category, and 21.6 % scored in the "low professional efficacy" category. The study by Rakofsky et al. (2018) focused on physician clerkship directors; clerkship directors are focused on educational endeavors. There are many roles in academic medicine that leads to stress and burnout. Educational leadership roles (Rakofsky et al., 2018), simulation labs, administrative functions, research, and clinical duties are factors associated with burnout in academic medical institutions. Demmy et al. (2002) found faculty suffered from burnout when leadership is unsupportive of protected research time

or unsympathetic to personal time. Additionally, burnout symptoms become prevalent with faculty who become burdened with unequitable salary distributions and a lack of trust and communication within the ranks (Demmy et al., 2002).

Demmy et al. (2002) completed their study and found 105 participating faculty either left the institution or of those faculty remained, they have a similar overall satisfaction score. Seeking opportunities elsewhere were rated at (a) administrative frustrations (59%), (b) income (18%), (c) advancement (9%), and (d) academic frustrations (9%). In a similar study, Girod et al. (2017) found similar results when surveying 137 faculty members for burnout. Eighty-eight individuals responded to the survey stating professional concerns and advancement, salary, and personal and family reasons were the main causes for intent to leave, burnout, and job dissatisfaction (Girod et al., 2017). El-Ibiary, Yam, and Lee (2017) also found emotional exhaustion to be the primary burnout cause in 758 participants (2318 individuals invited). Burnout is a direct correlation to stress in academic medicine, according to all of the previously mentioned studies.

**Variable: Intent to leave**

Intention to leave academic medicine is not a problem just in the United States, but also a problem worldwide (Assefa et al., 2017). Assefa et al. (2017) reported in Ethiopia, 29.7% of 1,258 faculty physicians intended to leave academic medicine per 1,000 physicians. Bucklin et al. (2014) reported 34% of faculty within one academic medical school left within three years after hire date. Intending to leave has an equal impact on an individual's occasional thought of leaving academic medicine. Lowenstein

et al. (2007) stated 42% of 532 participants within their study had seriously considered leaving academic medicine. Thirty-three percent of a sample of 3,120 nurse faculty experienced intent to leave academic nursing (Yedidia, Chou, Brownlee, Flynn, & Tanner, 2014).

According to Brod et al. (2017) faculty seek engagement, career advancement, a supportive climate, and the ability to work with diverse populations as the top reasons for faculty intent to leave. However, Girod et al. (2017) found during research, the primary reasons for leaving an academic medical institution are (a) professional advancement, (b) salary, and (c) personal and family reasons. Additionally, secondary causes for leaving are (a) outside opportunities, (b) perceived lack of opportunity, (c) feeling undervalued or unrecognized, and (d) lack of room for advancement. Bucklin et al. (2014) and Girod et al. (2017) reported teaching, research, and service were not a priority with leadership in academic medicine. Inclusiveness and respect, as well as, open communication lacked in an academic environment, according to Bucklin et al. (2014). Many factors were not prevalent within academic medical institutions; however, important to faculty members. These essential factors are professional development, recognition, and teaching excellence (Bucklin et al., 2014), as well as compensation (de Oliveira Vasconcelos Filho et al., 2016).

Retaining faculty in academic medicine has been a topic for decades (Barnes et al., 1998). Since 1984, variables that have influenced intent to leave have consisted of (a) career age, (b) gender, (c) organizational decline, (d) campus governance, (e) organizational satisfaction, and (f) career satisfaction (Barnes et al., 1998). Additionally,

Barnes et al. (1998) did not find a relationship between intent to leave and gender, tenure status, or academic discipline. Job satisfaction and salary are also significant in more recent studies for physicians in academic medicine (Lu et al., 2017). Lu et al. (2017) reported increasing salaries and reducing work hours, and improving career development opportunities are significant for physicians, which could potentially influence many physicians to reduce job dissatisfaction and intent to leave scores in research and organizations.

Furthermore, Brown et al. (2016) and Clark et al. (2018) reported faculty workshops provided faculty with wellness initiatives and a focus on faculty development. Cited in numerous studies is a lack of faculty development as a cause of intention to leave. Providing faculty development workshops for academic faculty has lessened the intention to leave by 91% out of 31 respondents (34 individuals invited to participate in the study; Brown et al., 2016). However, there is a shortage of studies in academic medicine studies in the Southeastern region of the United States regarding intent to leave for faculty.

## Leadership

Leadership in healthcare is critical and multiple methods are necessary for efforts to retain faculty while managing successful organizations. Administration utilizes various ethical decision-making skills or traits (Albert et al., 2014), as well as, sound moral judgment in healthcare for the benefit of faculty, residents, staff, community populations, academic programs, and the profitability of the institution. Leadership has a tremendous influence on the behavior and the outcomes of employees within an academic medical

organization. Furthermore, Dotan et al. (2018) reported leadership in academic medicine focus on building departments that provide quality care, provide high-quality education, and provide groundbreaking research. The most common theme in leadership theories is (a) to be adaptive, (b) to increase knowledge and to be knowledgeable, and (c) to be a team player (World Health Organization, 2017).

**Transformational Leadership Theory**

Patel et al. (2016) reported transformational leadership characteristics are influential in healthcare faculty and researchers. These characteristics are (a) idealized attributes, (b) idealized behaviors, (c) inspirational motivation, (d) intellectual stimulation, and (e) individual consideration. Transformational leaders can influence faculty to develop commitment, trust, cohesion, and motivation (Allen et al., 2016; Patel et al., 2016). Transformational leaders lead by example, motivate and inspire others, and promoting individuality while encouraging the follow-through of the organizational goals and positive outcomes.

Interestingly, transformational leadership is apparent in more successful organizations and linked to successful employees (Allen et al., 2016; Li et al., 2019; Patel et al., 2016). The retention of high-performing faculty, innovative researchers, productive teams, and robust collaboration lead to a more successful organization in academic medicine (Patel et al., 2016). All of these attributes are contributions to positive healthcare outcomes and successful programs. Patel et al. (2016) reported academic healthcare institutions should require transformational leaders to steer improved patient outcomes due to the competitive healthcare sector.

**Participative Leadership Theory**

Ghaffari et al. (2017) studied 123 individuals and found participative leadership to have a mediating role in the fair treatment of faculty and job satisfaction. Increasing empowerment, an employee's motivation, and achievement within the organization provide the individual with the ability to become more productive while at work (Dobre, 2013; Ghaffari et al., 2017). Ghaffari et al. (2017) reported employees who felt empowered with fair treatment within the organization had better outcomes of job satisfaction. Participative leadership is apparent between the mediation of fair treatment and job satisfaction (Ghaffari et al., 2017). Participative leadership varies depending on the hierarchy level, as well as components in the health system (World Health Organization [WHO], 2016). However, participative leadership is more supportive in an academic healthcare setting.

The WHO (2016) found participative leadership theory to provide organizations the ability to grow more rapidly into the future. Within healthcare organizations and the ever-changing facets of healthcare, rapid changes are vast (Al-Abri, 2007). A leadership style promoting growth within the academic medical institution and the faculty benefits the programs and the community (Ghaffari et al., 2017; WHO, 2016). Ghaffari et al. (2017) reported participative leadership provides opportunities for faculty to develop and experience growth, an increase in job involvement, higher job satisfaction, and respect and fair treatment within the organization. Frequently, the most of the opportunities for faculty are experienced through shared research and publications (Dotan et al., 2018), which is often the case within academic medicine.

Participatory leaders host a thriving institution in healthcare (Markle-Reid et al., 2017; WHO, 2016). The growing institution is primarily because of the non-linear, participatory decision-making hierarchy system formed by the leaders in institutions (WHO, 2016). The WHO (2016) reported participatory leadership provides healthcare organizations and their faculty the stability necessary to manage turmoil and difficulty from the internal and external challenges that arise while hosting a debate to inspire collaboration to improve processes and programs, as needed.

**Employee Relationships with Leadership**

Often faculty in academic settings feel pressure from their leadership teams to perform on a higher scale, compromise standards (Albert et al., 2014), and work longer hours to complete their jobs at the cost of job satisfaction and personal satisfaction (Ghaffari et al., 2017). Leaders that include their faculty in decision-making and encourage involvement in the decision-making process have proven to influence the empowerment of providers (Dotan et al., 2018; Ghaffari et al., 2017; Lucas et al., 2018; Patel et al., 2016). The involvement becomes necessary in job satisfaction, lowering stress, (Ghaffari et al., 2017; Langstedt, 2018) and is significant in turnover intention rates.

Additionally, Lucas et al. (2018) reported 93 out of 94 participating academic medical schools in the United States have leadership development programs. However, many faculty cite a lack of career development as a reason for intent to leave. Academic medical institution leaders that are hosting leadership development and mentoring can

build relationships with their faculty members in efforts to retain those individuals and promote growth (Lucas et al., 2018; Patel et al., 2016).

Furthermore, Dotan et al. (2018) reported chairpersons might have the intention to leave within 5 to 7 years after position assignment. Chairperson intention to leave becomes detrimental for employee relationships, research, the necessary department implemented changes, and academic program profitability. Improving the intention to leave at all levels would improve academic programs for all facets and individuals involved. Academic programs focusing on leadership development may improve the intention to leave, which would improve profitability and community outreach through provider services (Dotan et al., 2018; Lucas et al., 2018).

## Geographic Region and Population

Studies focused on *intent to leave*, *stress* and *age* for faculty physicians in academic medicine are not vast. Searching the Walden Library, Google Scholar, ProQuest Central, and ProQuest Health for the terms *intent to leave*, the *United States* of *America* or *U.S.A.* or *U.S.*, *healthcare*, *stress*, *age*, *physician*, *turnover*, and *turnover intention* resulted in 28 studies since 2010. Of those 28 studies, only nine focused on faculty physicians. The rest of the studies focused on nurses and nursing shortages. The nine faculty physician studies included stress and burnout and included age. Those nine studies show a correlation between stress and burnout, and there is a different correlation between age and turnover. However, none of the studies have a variable of intention to leave. The lack of studies focused on faculty physicians in the southeast region of the United States could potentially provide interest in further research in the healthcare sector

of business research, especially in this region. Additionally, this study has the potential to increase interest in research for academic medical faculty physicians within the Southeastern region of the United States based on faculty intent to leave, stress, burnout, and leadership concerns that would negatively influence the operation of academic medicine.

## Research Methodologies

Research methodologies consist of qualitative, quantitative, and mixed methods. Determining which method to use is the researcher's task of deciding which research question to ask (Yin, 2018). There are many causes for a faculty member of an academic medical institution to have intent to leave, therefore, utilizing a method that provided the foundation to investigate data by hypotheses testing and to examine relationships between variables was the best option for this study. The research question for this study was "What is the relationship between faculty stress, faculty age, and faculty intent to leave academic medical institutions"? This research question does not ask a who or when question; therefore, the qualitative research method and the mixed-method research method was not the ideal research method for this study. Because of the research question, the quantitative research methodology was selected for this study. Intent to leave impacts academic program profitability, clinical outcomes, physician wellbeing, and educational outcomes. In this study, I sought to examine the relationship of faculty members of the academic medical institution reporting their intent to leave the academic medical institution, their level of stress, and age.

**Quantitative Research Designs**

There are five types of quantitative research methodologies: (a) correlational, (b) descriptive, (c) quasi-experimental, (d) experimental, and (e) mixed-methods (Saunders et al., 2015). For this study, I chose to use the correlational methodology. Correlational research has specific attributes that fit the design methods over the other designs. Correlational research seeks relationships between variables. A correlational research method has restrictions, keeping the researcher from manipulating the variables or the data (Saunders et al., 2015). Data restriction allows the data collection, the data analyzation, and a determination of whether there is a pattern. A pattern in the data is indicative of a correlational relationship (Saunders et al., 2015). Additionally, correlational research requires the use of a power analysis, in which a G*Power system determined the sample size for this binary logistical regression analysis.

Descriptive research focuses on identifiable variables and provides systematic information (Saunders et al., 2015), unlike correlational research. A descriptive study does not start with a hypothesis; however, one is developed later in the study, usually after data collection. Quasi-experimental research also assesses the cause and effect between the independent variable and the dependent variable (Saunders et al., 2015); however, there is less ability to make an inference for cause and effect like experimental and descriptive (Saunders et al., 2015). Quasi-experimental research has facets to manipulate, similar to descriptive and experimental research. Lastly, like correlational research, a power analysis is required.

Experimental research is laboratory-based sciences (Saunders et al., 2015). Additionally, experimental research typically focuses on psychological and social science research, and rarely focused on business (Saunders et al., 2015). Experimental research uses hypotheses, as correlational research does; however, experimental research tests the null hypothesis statistically manipulating the independent variable (Knight, 2010; Saunders et al., 2015). Furthermore, experimental research assesses the cause and effect relationship between the independent and dependent variables (Saunders et al., 2015). Lastly, the researcher can control experimental research, allowing manipulation of the data collection (Saunders et al., 2015). Also, experimental research is purposed with the probability of change in an independent variable, causing a change in a dependent variable (Saunders et al., 2015).

Comprised of qualitative and quantitative aspects, mixed-methods research (Brown et al., 2016) results in questionnaires and surveys (Brown et al., 2016), as well as participant interviews or focus groups (Brown et al., 2016). This method of research has a balance of data collection, data analysis, and data interpretation (Saunders et al., 2015; Shorten & Smith, 2017). Shorten and Smith (2017) reported researchers used mixed-methods in healthcare studies more frequently due to the layers of research questions. Healthcare is continuously changing; therefore, mixed-methods research shows common trends more often in healthcare (Shorten & Smith, 2017). Mixed-methods research usually utilizes an inductive strategy to identify themes, whereas correlational research utilizes deductive approaches (Brown et al., 2016).

## Transition

Faculty intent to leave can cost academic medical institutions over 1 million dollars (Hamidi et al., 2018). Section 1 discussed faculty *intent to leave*, the variables *age* and *stress*, and examined the method that the academic medical institutions experience through the predictors mentioned previously. As mentioned, academic program profitability, physician training, improved public health initiatives, and improved patient outcomes have influenced the decisions of leadership in healthcare. The purpose of the quantitative correlational study was to determine if there was a relationship between *faculty age, faculty stress, and faculty intent to leave* within academic medical institutions. The business problem led to the literature review, which provided a thorough analysis of the literature. Research has shown stress is prevalent in academic medicine; however, there is limited research on faculty intent to leave academic medicine. Because of the lack of current research on the topic, it demonstrated the need for further research on academic medical institution *faculty intent to leave* studies in the United States, specifically in the Southeastern region.

Section 2 includes the purpose statement, role of the researcher, participants, the research method and design, as well as the population, and sampling sections. Additionally, Section 2 includes an ethical research section, a discussion on the data collection instruments (the Perceived Stress Scale and the study researcher-developed intent to leave questionnaire) and data collection technique, the data analysis, and the study validity. Section 3 consists of the study introduction, the study findings, and the

application to the professional practice, followed by implications for social change, and recommendations for actions.

## Section 2: The Project

Section 1 contains the information on the foundation of the study; Section 2 elaborates further on the details regarding the research purpose and the guide of my choices in population and sampling, survey instrumentation, data collection techniques, and the data analysis-binary logistical regression. Furthermore, Section 2 also provides details on the role of the researcher, ethical research, the quantitative research method and correlation design, and the study validity.

### Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between faculty age, faculty stress, and faculty intent to leave within academic medical institutions. The independent variables were faculty age and faculty stress. The dependent variable was faculty intent to leave. The target population consisted of faculty physicians participating in a tripartite mission, who specialize in clinical appointments, teaching responsibilities or research duties, as well as administrative roles employed by an academic medical institution with 767 faculty in the Southeastern region of the United States. This target population is appropriate because faculty members employed with an academic medical institution may have the intention to leave the institution. This study contributes to social change by providing leadership of the institution, the data necessary to modify human resource policies to improve the level of stress, and the intent to leave for faculty members. These policy modifications will offer a positive effect on the profitability of educational programs, clinical outcomes, and research initiatives providing the community with an increase in physicians,

wellbeing initiatives, and a growth in clinical research, which benefits various populations.

## Role of the Researcher

As the researcher in a quantitative study, I was responsible for the development and testing of hypotheses through statistical analysis (Farrugia et al., 2010). Development and testing of hypotheses includes collecting and analysis of the data, as well as answering the research question (Allen, 2017). I did not express personal biases within the analysis of data while conducting my study (Mullane & Williams, 2013). I utilized an online survey method to seek faculty physicians anonymously to participate in the study.

For 8 years, I have been an employee of the institution that the sample was drawn from but I have no personal relationships with any faculty physicians within this institution. Additionally, I have no responsibility for or supervision over any of the faculty physicians within the institution. To conduct the study, I invited all faculty members to participate in the survey and the responses were anonymous; therefore, I was not aware of who responded (see American Association for Public Opinion Research, 2020). The survey method prevented me and any participants from having any communication during the study.

Following the guidelines from the *Belmont Report*, researchers are to respect research participants and abide by ethical standards (The Belmont Report, 1979). Ethical standards include minimizing the risks to the participants, treating participants/human subjects fairly, and providing full disclosure of details and rights, then obtaining consent

from the participants (The Belmont Report, 1979). Following ethical standards is to use the three principles of the *Belmont Report*, (a) respect for persons by offering superior confidentiality, (b) respect for beneficence by completing an anonymous study, and (c) respect for justice by including all individuals of the population (The Belmont Report, 1979). I committed to executing the study with superior ethical behavior and reporting the data without bias (Belle & Cantarelli, 2017). I accomplished this by maintaining the privacy of faculty email addresses, including all faculty participating in the tripartite mission, and reporting the data without bias.

## Participants

Martínez-Mesa et al. (2016) stated the researcher should select participants with features that coincide with the study. Regardless of the features of the participants and the study elements, I treated participants equally, as there was no direct contact with any participants. The participants of the study were faculty physicians within an academic medical institution within the Southeast region of the United States. Faculty physicians were eligible by having an M.D., Ph.D., D.O., or M.B.B.S. degree, and who participated in a tripartite mission within the institution.

Additionally, there was no age limit for eligibility, as faculty physician ages vary (Degen et al., 2015); this is due to the age the individual graduates from residency and begins their career, as well as when the individual decides to retire (A.A.M.C., 2019). The participants in the study were either male or female. Additionally, participants were from various ethnic backgrounds and races.

To gain access to the participants, I used a data list created from the Institutional Effectiveness department of the study location to obtain faculty email addresses. Obtaining the faculty email addresses allowed me to email the survey link to the faculty of the academic medical institution (Linzer et al., 2016; Lowenstein et al., 2007; Pedrazza et al., 2016). Additionally, I used the study location as the Institutional Review Board of record, approved I.R.B. number 1519110-3, then gained approval from the Walden University Institutional Review Board, the same I.R.B. number 1519910-3. I uploaded all email addresses into Qualtrics, as this was the chosen method to distribute communication to the participants for the study. Qualtrics provided me the ability to input the survey and questionnaire into the system, upload email addresses, and distribute surveys to the email addresses as indicated. I distributed the survey through email to the faculty members, which included the consent, with one link to offer an anonymous response through the platform.

## Research Method and Design

Yin (2018) reported depending on the research question, this will determine the research method, whether it is qualitative, quantitative, or mixed methods. Quantitative research was the appropriate method for this study because quantitative research examines the relationship between two or more variables. Additionally, I selected a correlational research design over experimental or descriptive.

### Research Method

There are many reasons a researcher selects their chosen research method. Quantitative research was the preferred methodology for this study. The quantitative

research method provides researchers the ability to answer a hypothesis with factual information (Cohen, 2008). Utilizing the Perceived Stress Scale and a self-made Intent to Leave Questionnaire as the surveys for the study provided me with the data necessary to answer the research question and determine which hypothesis is accurate.

Tully (2014) reported qualitative research provides the researcher with relational questions and focuses on detailed relationships between variables. Qualitative research then focuses on the causes of the relationship between variables (Tully, 2014). Lau and Kuziemsky (2017) stated qualitative methodologies are the *why* and *how* of research. Additionally, Lau and Kuziemsky (2017) reported qualitative researchers might view data and the theories as intersubjectivity instead of objectively, as compared to researchers that conduct quantitative research. Cohen (2008) stated qualitative research has aspects of research that rely on personal judgment in data analysis. Ultimately, qualitative research is the inquiry and observations in a natural setting (Teherani et al., 2015).

Unlike qualitative research, quantitative research is not the observations of or inquiry of individuals; instead, it is the collection of data (Yin, 2018). Rahi (2017) reported quantitative research provides the researcher the ability to collect data from a population and perform statistical tests. Performing statistical analyses, examining the relationship between variables, and predicting outcomes through a quantitative research method (Saunders et al., 2015) utilizing questionnaires and surveys (Dandar et al., 2019; Ponto, 2015; Saunders et al., 2015) are the processes necessary to conduct quantitative research.

Mixed-methods research uses qualitative and quantitative methods; therefore, specific aspects from each process become necessary depending on the particular needs/requirements of the study (Saunders et al., 2015; Yin, 2018). Because mixed-methods research has quantitative and qualitative components, some report this method has a strengthened validity over other methods (Schoonenboom & Johnson, 2017). Strengthened validity is the result of triangulation and expansion. Lau and Kuziemsky (2017) stated mixed-methods research usually becomes the chosen method when researching health sciences and health services. However, not all researchers are interested in the personal aspect of a qualitative method; therefore, the mixed-method research method may not be the selected method for health sciences research.

**Research Design**

Research designs vary depending on the chosen methodology. Correlational designs, experimental designs, or descriptive designs are designs in quantitative research methodology. Correlational designs are often the chosen design when completing an organizational study (Lau & Kuziemsky, 2017). Experimental designs are often the chosen designs in a controlled environment, with two groups–the experimental group and a control group (DeCarlo, 2018; Saunders et al., 2015). Descriptive designs intend to determine a phenomenon within the research question (Tully, 2014).

Correlational research designs prevent the manipulation of variables or data within a study (Price et al., 2015; Saunders et al., 2015). A correlational design reveals patterns in the analysis of the data (Lau & Kuziemsky, 2017; Saunders et al., 2015), allowing the researcher to predict the outcome (Jenkins, Sperrin, Martin, & Peek, 2018)

with hypothesis testing (Lau & Kuziemsky, 2017) which is beneficial in business and/or organizational studies (Mitchell, 1985). Researchers view reliable data as stable data in data collection and analysis (Cohen, 2008).

Correlational designs are not a chosen design to examine causality association with variables (Hung, Bounsanga, & Voss, 2017), which provided this as the appropriate design for the study. Furthermore, Hung et al. (2017) reported researchers might use casual assertions from correlational findings and overreach in their plans. Casual claims from correlational findings become challenging to analyze, and the assumptions are incorrect. To ensure the evidence supports the hypotheses and there are no assumptions made, adequate evaluation of the data is necessary (Califf, & Pearson, 2019; Hung et al., 2017; Tully, 2014).

## Population and Sampling

The population for this study were the faculty physicians of an academic medical institution within the Southeastern region of the United States. The physicians were either M.D., Ph.D., D.O., or M.B.B.S. physicians. There were 767 physicians that participate in a tripartite mission of clinical, research, teaching/service, or administrative duties. The *Intent to Leave* questionnaire included individual clarification for contribution to the tripartite mission. Exclusions to this study are other providers, such as nurse faculty or advanced practice practitioners or faculty not participating in the tripartite mission.

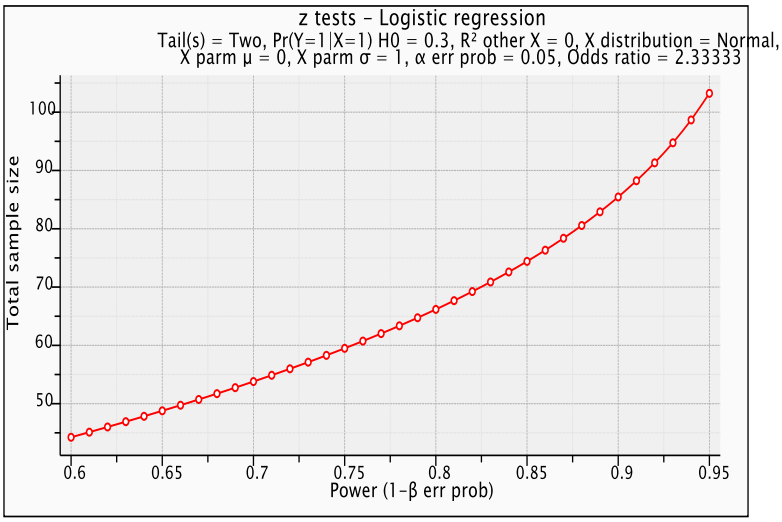
Chosen for this study was the probability sampling method. Probability sampling is a hypothesis tested, statistical inference, objective approach of research (Krefeld-

Schwalb et al., 2018). Probability sampling often becomes the chosen method for unbiased research studies (Krefeld-Schwalb et al., 2018). This study was unbiased; there was no gender bias, no racial or ethnicity bias, and no bias based on position within the institution. Krefeld-Schwalb et al. (2018) pointed out probability sampling is intended to provide researchers with a generalization of the population studied. However, difficulties with probabilistic sampling are that the method is time-consuming because a more significant number of individuals are analyzed, and the cost can be excessive (Krefeld-Schwalb et al., 2018). Additionally, there was no subgroup or random sampling, as all participants that responded were included in the study.

G*Power is a software application quantitative researchers use when conducting sample size analysis (Uttley, 2019). G*Power 3.1 software was the software necessary to perform the z tests logistic regression to determine the sample size required for this study. A minimum of 104 individuals was essential for participation in the study based on the G*Power analysis (Figure 2).

**Figure 2**

*Power as a Function of Sample Size*




*Note*. Power as a function of a sample size to explain the requirement for this logistical regression analysis.

According to Bujang et al. (2018) in logistical regression analysis, there should be 50 participants per independent variable. Based on this recommendation, a minimum of 100 participants was necessary to have a sample size that represents the population of over 500 individuals and the two independent variables, *age* and *stress* (Bujang et al., 2018). Based on the recommendation by Bujang et al. (2018) and the minimum sample size output from G*Power, the recommended sample sizes were in alignment.

## Ethical Research

Informed consent is to inform individuals of any severity and probability of potential harm, as well as the benefits of participation (Alston et al., 2014). Informed consent is the safeguard intended for autonomy, self-determination, and inviolability (Hall et al., 2012). Additionally, informed consent is a method of building trust between researchers and participants, as well as providers and consumers (Hall et al., 2012). This study was anonymous; therefore, a Waiver of Consent and Waiver of Documentation was utilized and filed with the I.R.B. number 1519110-3. A web-based survey consent letter was required seeking participant consent. Participation in the study was anonymous; therefore, there was no option to withdraw from the survey, only to decline participation. There were no incentives and no consequences for not participating in the study.

An email was sent to all M.D., Ph.D., D.O., and M.B.B.S. faculty within the institution requesting their participation in the study. Within the email, a link was provided for the individual to select. This link was the same for all participants, which allowed the study to remain anonymous. Each participant had the option to participate in the survey or to decline participation through the Web-based survey consent and survey link. The individuals that chose to participate in the survey would have their responses sent anonymously through the Qualtrics platform and stored in the platform for the researcher to download the information into S.P.S.S. for analysis. There was no identifying information in the survey. Additionally, the organization was referenced as the *institution* throughout the survey to provide anonymity. All responses to the survey will be stored securely for five years upon completion of the study.

## Instrumentation

The Perceived Stress Scale and an Intent to Leave Questionnaire were chosen as the instruments for the study *Faculty Intent to Leave Academic Medicine and the Association of Stress and Age*. The instrument, as mentioned earlier, The Perceived Stress Scale constructed by professional researchers in 1994, is valid and reliable (Cohen, 1994). The Intent to Leave Questionnaire was created by the researcher in November 2019 and approved by the Institutional Review Board, I.R.B. number 1519110-3. All raw data collected is stored by the researcher in a secure online database, and the data will be made available by written request.

### Scales of Measurement

Scales of measurement in quantitative research are nominal, ordinal, interval, and ratio, with the exception – nominal and ordinal is also qualitatively based (Mishra et al., 2018). Stanley Smith Stevens developed the scales of measurement in 1946 (1946). Depending on the type of data the researcher is collecting will determine the kind of scale, according to Mishra et al. (2018). Each data type and scale may differ from one another (Mishra et al., 2018).

Nominal scales have no numerical value; therefore, the values cannot be added, subtracted, divided, or multiplied. Additionally, the nominal scale cannot be in any specific order (Stevens, 1946). The ordinal scale is the measurement that can be in order (Stevens, 1946). Having a measure in order means numbers or items are in a category based on the ordinal scale of measurement. The interval scale of measurement has ordered numbers with specific and meaningful divisions between the numbers (Stevens,

1946). Lastly, the ratio scale of measurement is the same as the interval scale; however, the ratio scale has zero, and zero is meaningful (Stevens, 1946).

***Stress***

The first independent variable was stress. Stress is a ratio scale of measurement—items 3-12 on the survey comprised the questions for this variable. A 5-point Likert Scale, ranging from 0 = *Never* to 4 = *Very Often* was used to calculate the total score. The overall rating was determined by summing the totals; however, numbers 6, 7, 9, and 10 were summed in reverse.

***Age***

The second independent variable in the study was age. Age is a ratio scale of measurement. Item 2 on the survey states, "What is your age?" with multiple-choice options for the participant to select his/her age range. The possibilities were "30-34", "35-39", "40-44", "45-49", "50-54", "55-59", "60-64", "64-69", "70+", and "choose not to answer." The selected entry answer transfered into S.P.S.S. as the participant selected in the survey.

***Intent to Leave***

Intent to leave was the dependent variable for the study. Intent to leave is a nominal scale of measurement because there is no numerical value, and it is in no specific order. The available responses to intent to leave were "*Yes*" = 1 or "*No*" = 0 on question 13.

**Perceived Stress Scale**

The Perceived Stress Scale, developed by Sheldon Cohen in 1983, is hosted by Mind Garden (1994). The Perceived Stress Scale (P.S.S.) measures the degree to which an individual appraises their life as stressful. The P.S.S. items mean how unpredictable, uncontrollable, and overloaded participants feel in their lives. Additionally, the survey has current inquiries for stress experiences. The inquires were over the last 30-day timeframe from when the survey was taken. This survey was uploaded into Qualtrics and distributed through a one-link email to all faculty members.

According to Lee (2014), the 10-item P.S.S. is superior in validity and reliability in comparison to the 14-item and 4-item P.S.S. surveys. The P.S.S. 10-item survey continually exhibits an internal consistency for reliability in studies (Lee, 2014). Often used in research for college student populations or workers, the P.S.S. had a comprehension level design for individuals with at least a junior high school education (Cohen, 2008). The participants use a 5-point Likert scale, and the scores calculate in reverse on the four positive items (4, 5, 7, and 8) e.g., 0=4, 1=3, 2=2, 1=3, and 0=4 (Cohen, 2008). The other six items score by the value chosen, then all choices summed. In summary for scoring, the sum would be as follows 1, 2, 3, 4R, 5R, 6, 7R, 8R, 9, 10. According to Cohen (1994), the psychometrics for the Perceived Stress Scale:

Reliability: alpha = .78

Validity: Correlates in a predicted way with other measures of stress

The Perceived Stress Scale is a free download from Mind Garden, as well as from the Carnegie Mellon University website. Dr. Cohen authorizes use through his site

Carnegie Mellon University (cmu.edu/dietrich/psychology/stress-immunity-disease-labs/) to use the scales developed in his labs when the research is for nonprofit academic research or not-for-profit educational purposes (Appendix B).

**Intent to Leave Questionnaire**

The Intent to Leave Questionnaire was developed by myself. The information intended to gather from the questionnaire is a "*yes*" or "*no*" to the question "*Do you have intent to leave this institution*?". Additional questions on the survey were related to the reason for intent to leave (if yes was chosen), faculty rank, department, years of service, hours worked per week, and work effort. Seeking this information assisted in answering the research question, "*What is the relationship between faculty stress, faculty age, and faculty intent to leave academic medical institutions*?". The items in the self-developed questionnaire were uploaded into Qualtrics and distributed through the one-link email to all faculty members.

**Perceived Stress Scale and Intent to Leave Questionnaire**

The final survey comprised of the Perceived Stress Scale and the questionnaire, Intent to Leave created in Qualtrics for one survey (Appendix C) to be disbursed through the aforementioned one-link email. The survey remained open in Qualtrics 4-weeks, and at a 2-week interval, a reminder email was sent to all faculty requesting participation. The survey was anonymous; therefore, the email went to all faculty the second time, whether or not they participated from the initial email request. However, individuals that previously completed the survey did not have the ability to participate again.

The survey in Qualtrics consisted of questions 1 and 2 from the Intent to Leave questionnaire for gender and age. Items 3 – 12 were the Perceived Stress Scale measuring the self-perception of stress. Questions 13 – 20 were the remaining intent to leave questionnaire inquiries regarding faculty rank, the department employed, years of service at the institution, hours worked per week, and work effort.

## Data Collection Technique

Data for the study was collected utilizing an electronic email-based survey method. I entered the survey questions into Qualtrics, along with the response choices formatted. A link populated through Qualtrics was formatted for use in an email, which the email was distributed through Qualtricts to faculty members of the institution. As individuals agreed to participate in the survey and submitted their responses, Qualtrics stored the responses. Once the data collection timeframe of 4-weeks closed, I examined the data collected and exported the data to S.P.S.S. for analysis.

The advantage of collecting data through an email-based survey is the responses will remain anonymous through the anonymous email link. I had the opportunity to reach 767 individuals in the population through this method of contact. Using this method of contact gave the study a higher statistical power, more significant amounts of data gathered, and a valid model of research (Jones, Baxter, & Khanduja, 2013). Additionally, using an electronic survey method provided the data collection (responses) to process directly into an electronic database, eliminating data entry errors (Hamilton & Hopkins, 2018; Jones et al., 2013).

Jones et al. (2013) reported researchers must be deliberate in the planning of which surveys and questionnaires to use in research. Furthermore, physicians typically will not respond to surveys (Jones et al., 2013); therefore, to be successful with this study, the planning and data collection technique was critical for a robust completion. Another disadvantage of the data collection method was the high non-response rate of approximately 33% with electronic surveys (Lindemann, 2019). According to Fincham (2008) and Saleh and Bista (2017) the average response rate expected should be set at approximately 60%.

## Data Analysis

During the research, data collection has various methods for possible analysis. Researchers use quantitative research methods to collect data to measure information based on the variables in the study (Daniel, 2016) to test the hypotheses, determine the answer to the research question(s), and analyze the outcome(s) (Saunders et al., 2015). Surveys, polls, questionnaires, or pre-existing statistical data may be chosen methods of collections and analysis for researchers (Creswell, 2013).

The purpose of the data analysis for this study was to answer the research question and test the following hypotheses:

Research Question: What is the relationship between faculty stress, faculty age, and faculty intent to leave academic medical institutions?

Null Hypothesis ($H_0$): There is no relationship between faculty stress, faculty age, and faculty intent to leave academic medical institutions.

Alternative Hypothesis ($H_1$): There is a relationship between faculty stress, faculty age, and faculty intent to leave academic medical institutions.

A binary logistical regression was the data analysis technique. Where there is a binary dependent variable, logistical regression is the chosen analysis technique. (Bucur et al., 2017; Ernst & Albers, 2017; Ranganathan et al., 2017; Sperandei, 2014). Also, logistic regression provides an advantage by avoiding any confounding effects of the variables, analyzing all variables together (Sperandei, 2014). Bucur et al. (2017) stated logistic regression is used more prevalently in research studies with a categorical dependent variable, instead of a numerical. The independent variables, age and stress are ratio scales of measurement. Additionally, logistical regression is typical in economic-financial fields, medicine, and epidemiology (Bucur et al., 2017). Lastly, logistic regression does not require a linear relationship between variables (Ranganathan et al., 2017).

Multiple linear regression was the other model considered for this study. Multiple linear regression can examine the relationship between the dependent and independent variables (Ranganathan et al., 2017). However, multiple linear regression supports a continuous dependent variable, which is the reason logistic regression was appropriate because predicting the likelihood of faculty intent to leave requires a yes or no response, which is dichotomous or binary.

Utilizing the Statistical Packages for Social Sciences (S.P.S.S.), version 24.0 provided the means to conduct a binary logistic regression analysis. Key parameters used to consider for data interpretation were the odds ratio, Cox & Snell $R^2$, $p$ (sig.) value,

Nagelkerke $R^{2,}$ and Wald statistic. Using the "exclude cases listwise" feature in S.P.S.S. was a feasible way to remove missing data from the study. However, "exclude cases listwise" may have caused the descriptive statistical totals to differ across variables. There was a risk for data screening to have shown outliers; and the independent variable *age* could have had outliers, which caused all age ranges to remain in the study.

Assumptions in this quantitative correlational study were (a) outliers, (b) the sample size, (c) fishing and error rates, or (d) reliability of the instrument. Outliers remained in the study because these would have been the age of faculty members. Ranganathan et al. (2017) stated when using age as an independent variable; it is important not to divide the ages into categories because age cutoffs are without reason, and vital information may be lost. With this study, this could have been significant; however, to protect anonymity, categories of age had to be used. The sample size assumption could cause a low statistical power, which would have required additional participants; therefore, the data collection would have to repeat through another method. However, G*Power was used to conduct a power analysis and confirmed the participant size. Knowing the relationship between the dependent and independent variables is necessary when understanding the parameters in data analysis. Utilizing G*Power to conduct a logistical regression analysis (Appendix D) resulted in a sample size of 104 individuals with a normal distribution, 95% confidence ratio.

The additional assumptions fishing and error rates were prevented by not repeating tests with the same data; this decreased the chance of errors in the conclusions. However, further analysis could have eliminated this threat, if needed (Guetterman,

2019). The reliability of the instrument could also be an assumption. However, the validity of the Perceived Stress Scale has been proven valid and reliable for years of research. Cohen et al. (2017) stated incorrect assumptions could result in correlational research showing (a) a relationship does not exist between variables when one does exist and (b) a relationship exists between variables when one does not exist. Logistic regression observations are independent of one another; therefore, repeated tests of the data will offer unsatisfactory results (Guetterman, 2019).

Within this study, violations of the assumptions varied. Outliers remained in the study because there was an expectation that participant ages would cause outliers. G*Power was utilized to calculate the sample size 104 participants with a normal distribution, 95% confidence ratio. The population accessed was 767 individuals, and according to Finchman (2008) and Saleh and Bista (2017) the average response rate should be set at approximately 60% of the population. Using the one-link anonymous email and a survey method for the study, I conducted a survey with a higher statistical power, more significant amounts of data gathered, and a valid model of research (Jones et al., 2013).

## Study Validity

Study validity is the responsibility of the researcher, ensuring relevant measures taken during data collection and analysis (Mohajan, 2017). The validity of a study is determined by how well each variable is measured through data collection and data analysis (Heale & Twycross, 2015; Mohajan, 2017). The alignment of the study must be

evident between the method and the design, ensuring consistency and validity with data collection, analysis through instrumentation (McGregor, 2017).

**Statistical Conclusion Validity**

Threats to a quantitative correlational study are non-existent (Price et al., 2015). There cannot be data manipulation, as mentioned by Price et al. (2015) and Cohen et al. (2017). A researcher determines the use of experimental and nonexperimental research based on the foundation of the research question (Price et al., 2015). Relationships between the independent and dependent variables vary when there are threats to the statistical conclusion validity (Flatt & Jacobs, 2019; Greenland et al., 2016; Lachmann et al., 2017). Furthermore, the reliability of the instrument(s) used in the study, the data assumptions, and the sample size are factors that influence the statistical conclusion validity of a correlational study. Threats to statistical conclusion validity could be (a) outliers, (b) the sample size, (c) fishing and error rates, or reliability of the instrument (Guetterman, 2019). I anticipated outliers due to the age of faculty members as a variable; however, there were no outliers in the study. A low statistical power would require additional participants; therefore, the data collection would have to repeat through another method. However, G*Power was used to conduct a power analysis and confirmed the participant size. Fishing and error rates can be prevented by not repeating tests with the same data; this decreased the chance of errors in conclusions; however, conducting a different analysis could eliminate this threat (Guetterman, 2019). Lastly, Cohen et al. (2017) stated incorrect assumptions could be made with correlational

research (a) a relationship does not exist between variables when one does exist and (b) a relationship exists between variables when one does not exist.

***Reliability of the Instrument***

The Perceived Stress Scale-10 item (PSS-10) was the chosen survey for this study. The P.S.S. 10-item survey continually exhibits an internal consistency for reliability in studies (Lee, 2014). According to Cohen, Kamarck, and Mermelstein (1983), the psychometrics for the Perceived Stress Scale:

Reliability: alpha = .78

Validity: Correlates in a predicted way with other measures of stress

The reliability, as mentioned above, and the validity of the PSS-10 were determined by the evaluation of the consistency of scores when evaluating a specific construct multiple times (Cohen et al., 1983). Heale and Twycross (2015) reported the most commonly used test for internal consistency determination is Cronbach's alpha (α). Cronbach's α result is a number between 0 and 1 (Heale & Twycross, 2015) with a reliability score that is 0.7 and higher. Because Cohen et al. (1983) determined the reliability of the PSS-10 is alpha = 0.78, this coincides with the Cronbach's α internal consistency testing. Overall, alpha values determined by Taber (2018) are as follows excellent (0.93–0.94), strong (0.91–0.93), reliable (0.84–0.90), robust (0.81), fairly high (0.76–0.95), high (0.73–0.95), good (0.71–0.91), and relatively high (0.70–0.77). Lower alpha values, according to Taber (2018) begin at (0.68) and decline to adequate (0.64–0.85), moderate (0.61–0.65), not satisfactory (0.4–0.55) and low (0.11). According to Nielsen

et al. (2016) and Kantrowitz-Gordon (2018) reported the P.S.S. exhibits external validity; however, Nielsen recommended using a two-dimensional model.

I created the Intent to Leave questionnaire for this study. Because the survey is self-created, with no testing previously, there is no validity or reliability. The survey provided information regarding the intent to leave, gender, age, faculty appointment, rank, effort, and years at the institution.

**Data assumptions**

Assumptions are often prevalent in statistical testing (Greenland et al., 2016). Flatt and Jacobs (2019) stated violations of assumptions might cause biased results or misleading forecasts, faulty confidence intervals, and scientific insights. Utilizing a regression analysis for quantitative data analysis provided an optimal opportunity for organizational research strength (Flatt & Jacobs, 2019). Typical data assumptions are (a) normality, (b) homogeneity of variances, (c) linearity, and (d) independence. Normality means distribution is normal with "0" as the mean and "1" standard deviation; homogeneity of variances requires data from different groups to have similar variations; linearity is the linear correlation between independent and dependent variables, and lastly, independence means all data is independent because there is no relationship between the variables (Ernst & Albers, 2017). Every statistical test has different assumptions, however. Different assumptions are the result of the two types of inference methods (a) parametric tests, and (b) nonparametric tests. Parametric tests are used when observations have approximately normal distributions, and nonparametric tests are used in other situations (Tyler, 2017; Vickers, 2005). This study was a logistical regression;

therefore, it was a nonparametric test, and data assumptions were not applicable. Nonparametric tests also are less powerful than parametric tests due to fewer assumptions (Tyler, 2017). Furthermore, nonparametric tests are more appropriate when outliers will exist (Tyler, 2017), and when results may be in a variable or ordinal rank.

### Sample Size

Utilizing a sample size that represents the population studied is critical in research. A sample size that serves the population ensures the study's validity is specified at an appropriate and satisfactory level (Heale & Twycross, 2015). Large sample size will provide results that are established by generalizations, which may help to minimize any bias within the study (Heale & Twycross, 2015; Mitchell, 1985). Using a statistical power to determine the measurement of necessary statistical significance is critical. Statistical significance provides the researcher of a study of the sufficient sample size of a population through a power analysis (Bujang et al., 2018; Heale & Twycross, 2015). If a study has a sample size that is too small, this can lead to negative implications, such as negative study validity.

## Transition and Summary

The purpose of this quantitative correlational study was to examine the relationship between faculty stress and faculty age and faculty intent to leave academic medicine. Individuals must conduct research that is reliable and valid. Section 2 included details regarding faculty of an academic medical institution, the quantitative method, and correlational design, population and sampling, the Perceived Stress Scale

and Intent to Leave Questionnaire instruments, data collection, and binary logistical regression analysis, and the study validity.

Section 3 will include the purpose of the study and a summary of the findings of the data collection. This will be followed by the presentation of results, the application to professional practice, implications for social change, recommendations for action and further research, and lastly, reflections of the doctoral study process. The study will be summarized with the conclusions of my study.

Section 3: Application to Professional Practice and Implications for Change

## Introduction

The purpose of this quantitative correlational study was to examine the relationship between faculty age, faculty stress, and faculty intent to leave within academic medical institutions. The independent variables were faculty age and faculty stress. The dependent variable was faculty intent to leave. The null hypothesis is accepted, and the alternative hypothesis is rejected, using a binary Forward LR model logistical regression. The faculty stress levels were significant, and intent to leave was significant; however, age was not significant. I conducted a bivariate correlation and discovered variables that were significant with intent to leave academic medicine were department employed, hours worked, and perceived stress. This caused the null hypothesis to be accepted.

## Presentation of the Findings

I used a binary logistic regression to examine the likelihood that several different factors predict the participants' intent to leave academic medicine. The variables of the study were intent to leave (dependent variable) and independent variables of age and stress. The null hypothesis is that there is no relationship between faculty stress, faculty age, and faculty intent to leave academic medical institutions. The alternative hypothesis is that there is a relationship between faculty stress, faculty age, and faculty intent to leave the academic medical institution. In this study, the model explained key parameters with effect sizes of .119% (Cox and Snell $R^2$) and .162% (Nagelkerke $R^2$) of the variance

in intent to leave. Age was not a predictor for intent to leave and caused the hypothesis to be null.

**Descriptive Statistics**

Table 3 depicts the descriptive statistics for the null hypothesis.

**Table 3**

*Descriptive Statistics- Frequency*

| | | What is your age? | Do you have intent to leave this institution? | PSS Results |
|---|---|---|---|---|
| N | Valid | 125 | 111 | 125 |
| | Missing | 0 | 14 | 0 |
| Std. Deviation | | 2.475 | .491 | .590 |

*Note*. *N* = number of responses to variable items.

**Inferential Results**

One hundred and twenty-five individuals participated in the study. The survey was sent to 767 faculty members who participate in the tripartite mission in an academic medical center in the southeast region of the United States. That equates to 16.3% of the population participating in the survey. Jones et al. (2013) reported researchers must be deliberate when conducting research with physicians because physicians generally will not respond to surveys. Additionally, electronic surveys with any population have a high non-response rate of 33% (Lindemann, 2019). One hundred and eleven participants answered the question, “do you have intent to leave.” Sixty-seven responded no, while

44 respondents stated yes, they have the intention to leave. The model predicted intent to leave through the classification table and had an overall percentage correct of 63.1%. Table 4 represents the age group of individuals that participated in the survey. Individuals that participated in the survey ranged from 30 years of age to over 70 years of age. The study had a varied age group, and the groups were represented well with participants. However, the age of individuals were not statistically significant in the relationship between stress and the intention to leave academic medicine.

**Table 4.**

*Analysis of Frequency Responses in Ages*

| Variable – Faculty Age | Age Group | Frequency | Percentage of Participants |
|---|---|---|---|
| | 30-34 | 14 | 11.2% |
| | 35-39 | 14 | 11.2% |
| | 40-44 | 17 | 13.6% |
| | 45-49 | 13 | 10.4% |
| | 50-54 | 17 | 13.6% |
| | 55-59 | 14 | 11.2% |
| | 60-64 | 15 | 12.0% |
| | 65-69 | 12 | 9.6% |
| | 70+ | 8 | 6.4% |
| | Choose Not to Answer | 1 | .8% |
| Total Participants | | 125 | 100% |

*Note*. This table depicts the frequency of participants in each category by age groups. 125 individuals responded to this question.

The SPSS analysis showed no significance as determined by the $p > 0.05$ for the variable age. Additionally, there were no outliers for the variable age. This is depicted in Table 5.

**Table 5**

*Analysis of Variable – Age – Not Significant*

| Variable Age (Group) | Score | Sig. |
|---|---|---|
| 30-34 | 6.788 | .659 |
| 35-39 | .145 | .704 |
| 40-44 | .317 | .574 |
| 45-49 | .780 | .377 |
| 50-54 | .047 | .828 |
| 55-59 | 3.746 | .053 |
| 60-64 | 2.151 | .143 |
| 65-69 | .304 | .582 |
| 70+ | .019 | .891 |
| Choose Not to Answer | .002 | .962 |

*Note*. Age group analysis of intention to leave, not measured due to insignificance – null hypothesis: $p > .05$. ($N = 125$).

The perceived stress scale is a valid means of measurement, as determined by Cohen (1986). The perceived stress scale was administered through Qualtrics and analyzed in SPSS. Stress is statistically significant as determined sig. = .030. The variable stress is depicted in Table 6.

**Table 6**

*The analysis of the overall Perceived Stress Scale - Significance*

| | | | | | | 95% C.I. for EXP (B) | |
|---|---|---|---|---|---|---|---|
| Variable | B | S.E. | Wald | Sig. | Exp(B) | L | U |
| PSS | -.421 | .194 | 4.696 | 0.030 | .657 | 1.084 | 12.320 |

Note. $N = 125$.

**Theoretical Conversation Analysis**

While age was not significant in the analysis of this study, stress, and intention to leave academic medicine was significant. The spiral dynamic theory used for this study assesses value systems, desires, and conflicts within a hierarchy (Butters, 2015), which was prevalent through the Perceived Stress Scale and the Intent to Leave Questionnaire. Spiral dynamics accurately depicted that individuals perceive their environment differently (Graves, 1970; McDonald, 2010), and this was analyzed in the study. Participants of the survey were applicable to the many levels of the hierarchy of spiral dynamics. Additionally, the many hierarchy levels were shown through the common themes found in the study: lack of leadership, lack of administrative support, seeking other career opportunities, and retirement.

The research question "What is the relationship between faculty stress, faculty age, and faculty intent to leave academic medical institutions?" was answered through the data analysis, and age showed no significance in the analysis. Even though age was not significant, Graves' spiral dynamics theory was a robust theoretical framework for this

study because of the hierarchy levels an individual progresses through life (Dandar et al., 2019).

Dandar et al. (2019) reported faculty survival is determined and maintained through the improvement of academic programs, longevity, and financial wellbeing of an institution. Beck and Cowan (1996) and Donkers (2016) determined survival behavior is intentional and competitive; this was shown through the automatic level of spiral dynamics theory – an individual's motivation by survival and environmental imperatives (Beck & Cowan, 1996; Butters, 2015; Southwick et al., 2014) through the data analysis. Faculty members reported a significant amount of stress, feeling overwhelmed, and conveying a lack of support from leadership and administrative support. Individuals with the intention to leave and without intent to leave experienced perceived stress, overwhelming feelings, and reported feeling leadership and administrative support was not sufficient.

The egocentric hierarchy level of spiral dynamics is met in alignment with the materialistic hierarchy level and the personalistic hierarchy level for this study. The egocentric hierarchy level is based on an individual's own needs, self-interest, and self-protection personally and professionally (Graves, 1970; Liang et al., 2016; Lindfelt et al., 2018). The materialistic hierarchy level is an individual's ability to seek success, results, influence over others, and autonomy (Beck & Cowan, 1996; Ede, 2013). Furthermore, Mullangi, Blutt, and Ibrahim (2020) reported individuals in academic medicine have additional stresses; however, when duties are modified, the autonomy and influence over others are spread, modifying the perceived stress that is influenced. The personalistic

level is to have an interest in belonging to others and maintaining concern with others (Beck & Cowan, 1996; Butters, 2015; Jeffers & Mariani, 2017). There was a common theme among faculty members that did not have the intention to leave that felt effective communication regarding training, teamwork, and removing silos were significant and should be implemented within the institution.

Cognitive existence can have a threshold of humanity (Beck & Cowan, 1996; Butters, 2015; Manstead, 2018). Experientialist existence was in alignment with cognitive existence for the results of the data analysis of this study. A common theme between individuals without intention to leave is a lack of diversity and a lack of communication between academic programs, and the hospital and clinics. The hierarchy levels of cognitive existence and the threshold of humanity can be seen through diversity and a need for communication in successful programs (Papadimos, 2019).

## Applications to Professional Practice

The purpose of the quantitative correlational study was to examine the relationship between faculty age, faculty stress, and faculty intent to leave academic medicine. Faculty responses to the perceived stress scale and intention to leave questionnaire provided a predicted depiction of underlying contributors of faculty intent to leave academic medicine. Faculty perceptions of predictors that influenced intent to leave, which has a financial impact on the academic programs and medical center, were the levels of stress an individual experiences, the hours worked, and the department employed.

While conducting my analysis, I examined other predictor variables, such as faculty department, faculty rank, hours worked, the timeframe of intention to leave the institution, years of service, and gender. Throughout the analysis of the predictor variables, faculty stress, hours worked, and faculty department employed were the significant variables with a relationship to faculty intent to leave academic medicine. Respectfully, the significant values (confidence ratio 95%) were stress level 3.7%, hours worked 1.6%, department employed 0.08% (dept1) 1% (dept2), 0.07% (dept9), and 1.9% (dept18).

The findings of this study found common themes from faculty members, such as an advanced number of hours worked, lack of support from leadership, lack of administrative support, seeking other career opportunities, and career advancement as reasons for intention to leave. Often, two or more of those themes were chosen as reasons for an intention to leave the institution. The faculty members' perceptions of lack of support from leadership and lack of administrative support could improve with modifications from leadership. The lack of support mentioned above regarding leadership and administrative support perceptions are directly correlated with the departments' faculty are employed. These findings should be a focal point for leadership to improve upon to reduce stress and minimize intention to leave within the institution. The second focal point is the number of hours worked by faculty. Enhancing the amount of support given to faculty could also improve stress levels and minimize the intention to leave.

Academic medicine leadership and human resources leaders can work together to apply information from this study to reduce faculty intent to leave academic medicine. The findings of this study could be relevant in providing academic medicine leaders and human resources leaders the information necessary to determine departmental stressors through the topics that faculty members feel leadership should be more involved in. Leadership understanding the faculty members' concerns on how to lower stress levels within departments could reduce faculty intent to leave and improve the environment for faculty. Improving the environment could be beneficial to implement appropriate processes to create a more pleasing and productive environment.

The findings of the study indicated that to lessen the intention to leave academic medicine, leadership must modify policies that have influenced faculty stress and faculty intent to leave or alter the environment to a more improved working environment for all involved. An essential piece of this study that would improve the business model is to increase the departmental personnel support staff and the number of faculty employees. This change would benefit academic programs, enhance patient care, and improve morale, all of which could improve the profit margin for the institution.

The findings of this study also indicate that organizational leaders can influence faculty members' perceptions of the institution. A common theme among individuals with the intention to leave and without intent to leave was fragmented clinics and compensation concerns. Some faculty reported other academic institutions might have higher compensation rates than the institution of the study location. Also, it was reported department employed may influence compensation. Previous studies have shown the

salary of those that participate in a tripartite mission struggle with pay when it comes to the clinical effort (Burns et al., 2018; Luong et al., 2018). Leadership may benefit from reviewing compensation policies to ensure faculty are compensated based on fair market reviews, experiences, clinical effort, research publications, and the size of the department.

## Implications for Social Change

The implications of this study for positive social change for faculty, residents, staff, and the communities include the opportunity for healthcare leaders of academic medical institutions and human resources professionals to begin implementing strategies to reduce faculty intention to leave. Reducing faculty intent to leave could be implemented by improving the work environment, providing personal and professional growth and development, and improving communication opportunities on all hierarchy levels. Understanding the influence that leadership and support staff have on faculty intent to leave is critical for academic medical institution leadership and human resources leadership (Belrhiti et al., 2019).

Academic medical institution leaders and human resources leaders can apply the research from this study to develop understandings and strategies to implement influencing methods to decrease stress and improve satisfaction in the workplace. Faculty physicians with a lower perceived stress level and without an intention to leave could experience a more stable emotional well-being, higher compensation, and more positive relationships personally and professionally, to include relationships with patients and the community (Ng et al., 2019). Enhancing a more positive work environment, enhancing patient care, and providing more knowledgable physicians into the

communities will grow academic programs while providing collaborative care through improved healthcare programs and public health initiatives (Daniel et al., 2018). The social implications of decreasing perceived stress levels and the faculty intention to leave within academic medical institutions can enhance the perceptions of the institution among the faculty, other employees, patients, community partners, and individuals seeking to attend medical school, residency, or fellowship through the academic programs.

## Recommendations for Action

Factors that influenced faculty intent to leave are hours worked, the department employed, and stress level. Common themes found among the faculty with intention to leave were lack of support from leadership, lack of administrative support, advanced hours worked, seeking other career opportunities, and career advancement. The recommendation for leadership and human resources leaders within academic medical institutions to reduce faculty intention to leave include (a) succession planning, (b) continuing education and leadership development, (c) hiring additional faculty to share the workload, (d) hiring administrative support specialists, and (e) promoting effective and transparent communication.

### Succession Planning

Academic medical institution leaders should consider succession planning, which aligns with multiple hierarchy levels of Graves' spiral dynamics (1970) theory for growth and advancement. Succession planning viewed through spiral dynamics hierarchy can identify high-drive, focused, and career-focused faculty. As stated by Silver and

Williams (2018) academic faculty members experience a strong work identity with an exemplary commitment to the academic medical institution employed. Furthermore, succession planning is favorable in academic medicine because there is a relationship between peers, it decreases the cost of recruitment and orientation, eliminates lengthy postings, and provides productivity and development of leadership competencies (Gottlieb & Travis, 2018; Papadimos, 2019).

**Continuing Education and Leadership Development**

Academic medical institution faculty members are significant in the performance of an institution. Clinical care, teaching future physicians, and performing medical research are among the duties of faculty. Developing leaders from within begins with assigning a senior leader to an interim chair to assist in the leadership development and coaching of that individual. Promoting from within will offer a better organizational return, financially and with employee morale.

Organizations should create benchmarks for faculty to set as their goals for growth and development within the institution. Papadimos (2019) reported faculty development and opportunities for advancement could be determined during annual evaluations. Annual evaluations are critical to deciding faculty interested in leadership positions, those in need of mentoring, and those that seek to continue or further education with leadership development.

**Hiring Additional Faculty**

Occasionally, there is no need to hire outside the institution when hiring for a leadership position (Papadimos, 2019). There are times a faculty member is identified as

an interim chair or interim administrator due to an abrupt vacancy. Identifying a faculty member in an interim leadership position becomes necessary when organizations plan for succession; leadership can plan by identifying productive individuals, offer department stability, and have an interest in moving forward with the institution (Gottlieb et al., 2019).

However, there are times that hiring outside of the institution is necessary, such as when the institution needs to hire additional faculty because of patient care workload, administrative duties, or research responsibilities. Mullangi et al. (2020) recommends hiring physician-executives in academic medicine. Physician executives would assist in ensuring programs are profitable; however, manage simulation and innovation departments, and lead the strategic planning for the institution. These duties would help remove some of the additional administrative responsibilities from the faculty physicians, thus, eliminating some of the perceived stress experienced and showing there is leadership support.

**Hiring Administrative Support Specialists**

In addition to this study, Rao et al. (2017) also discovered additional stress is caused by the lack of support from administrative support between faculty physicians and administrative support specialists. Faculty physicians require administrative support individuals to assist in managing clinics, assisting with administrative duties, and research in various capacities. Individuals in administrative support positions have transferrable skills such as exemplary written and verbal communication, computer

literacy, are well-adverse with organization and multi-tasking, and have a high attention to detail personality.

The demands of employment in academic medicine can be exhausting for faculty physicians. Faculty physicians in academic medicine find solace and less stress, according to study results, when there is adequate support staff. The environment, organizational and cultural conditions, and each individual determines the components of the work environment. Balanced administrative support staff could assist faculty physicians with flexibility, increased job performance, more significant meaning in their work and organizational culture, as well as a decrease in perceived stress.

**Effective and Transparent Communication**

Efficient, effective, and transparent communication is critical in academic medicine. Sanfillippo et al. (2018) reported unresolved conflicts and problems led to deteriorated relationships and a decline in effective communication and transparency. Reliable communication between leadership and faculty physicians could improve relationships, guide personal career development, and executive skill acquisition (Viera & Kramer, 2016). More recently, challenges in communication in healthcare have stemmed from research competition, medical education transformation, changes in healthcare systems, and recruitment and retention.

The leadership of an academic medical institution and human resources could foster positive relationships with faculty physicians, thus, addressing challenges, conflicts, and using constructive and collaborative relationships to move towards a goal that is cohesive between the organization, academic program, and the faculty physicians.

Written and verbal communication is deemed necessary in all academic medicine; therefore, negotiation, departmental advocacy, and effective communication are essential for a successful organization (Ratna, 2019; Vermeir et al., 2015). Academic medical institutions offer a multi-cultural diverse population; thus, communication is primarily promoted. For faculty physicians to foster effective communication, understanding culture, maintaining objective and dispassionate during conflict, and seeking positive relationships through transparency with leadership are suggested.

Overall, succession planning could remove bottlenecks in career advancement, eliminate abrupt vacancies due to death, and provide the institution a path to hire, promote within, and maintain an institution that provides an excellent standard of care and profitable programs. Healthcare leadership and human resources managers could use these recommendations to modify academic health care institution policies and structures to promote a more pleasing environment for faculty physicians. In turn, the environment would be more satisfying for the staff, and the patients, also; thus, resulting in more profitable clinics and academic programs.

The findings and recommendations of this study may be relevant to academic medical institution leadership and human resources leadership. Therefore, leadership in the industry should consider utilizing the suggestions to mitigate intent to leave by influencing faculty intent to leave, lowering the perceived stress of faculty members, and the perception of support from the institution at various levels. I will disseminate the results of the study to the leadership of the academic medical institution studied. Additionally, I will share the findings through publication in peer-reviewed journals such

as *Academic Medicine*, a journal of the Association of Medical Colleges, *Medical Education, the Journal of the American Medical Association, Medical Education Online,* or *BMC Medical Education.* Also, by the publication of this study through the ProQuest/UMI dissertation database, other researchers will have access to the study.

## Recommendations for Further Research

I propose two recommendations for further research. An important limitation of this research was the internal weakness of the correlational design. The correlational design does not assume cause and effect and a strong correlation could have been misleading; as well as correlational designs do not infer any impact or influence. Because of this, I recommend future research to extend this design using mediator variables. Utilizing mediator variables in the study would explain the relationship between the other variables.

A second recommendation to further the research would be to conduct an explanatory mixed-methods design. This design has become popular for health sciences and social studies (Buhse et al., 2018). This method would provide a rigorous and reliable design, and the explanatory mixed-methods design can be used to answer qualitative interview questions that would assist in an understanding of specific hypothesized inferential results that were not achieved (Schoonenboom & Johnson, 2017). While this design can be lengthy in data collection, this could pose beneficial when collecting data from faculty physicians of an academic medical institution.

## Reflections

My experience in the doctoral study process has been challenging and rewarding. I learned a lot about myself mostly. Early in my journey, I was very motivated. I was excited to complete my coursework and study. I wanted to absorb everything possible. Eventually, I began to enjoy the ability to balance my study, my personal life, and my professional life. I realized my professional life in mental health prepared me for completing my doctoral degree. I aligned myself with other DBA students, working alongside other motivated peers in my classes, connecting with those individuals on social media, and exchanging resources, sharing information regarding the process, and motivating one another as needed. Eventually, I accepted the process thoroughly and understood the steps in the process as a necessary level in developing a doctoral researcher and scholar. Now, I am more understanding of the correlations of faculty intent to leave, the strategies I have recommended to the leadership of academic medical institutions and human resources leadership, and how those recommendations could influence social change.

Additionally, I wanted to expand my knowledge of SPSS, which is why I chose to conduct a quantitative correlational study. While this was not the popular choice of those in my cohort, it was the best option for me to expand my knowledge and give me the most lucrative experience while studying with Walden University. I have learned so much while studying under the faculty of Walden University, and my research interest has increased. I look forward to the future of my research interests and abilities.

I used a valid and reliable survey, as well as a self-created intent to leave questionnaire. I am passionate about intent to leave in academic medicine because I am employed in an academic medical institution. Studying intent to leave in an academic medical institution was important to me. Researching perceived stress and age influencing the intention to leave has only increased my desire to further research on this topic. I have enhanced my knowledge of perceived stress and the concerns of faculty in academic medicine and feel the methods used to survey the faculty were the best options because the faculty were honest and did not refrain their opinions in the responses to the survey. The institutional concerns regarding the faculty perceptions of stress and intention to leave is prevalent and necessary to continue to research faculty intention to leave academic medicine and combat the problem with healthcare leadership.

## Conclusion

Faculty intent to leave academic medicine has negative consequences on the academic programs, clinical outcomes, peer-to-peer relationships, and individual faculty outcomes (Jeanmonod, 2016). On the other side of faculty intent to leave, faculty intent to leave has a negative financial impact on academic institutions and the academic programs (Hamidi et al., 2018; Shanafelt, Goh et al., 2017). Faculty members employed by the academic medical institution are responsible for training incoming physicians that will later provide services to the community (Brueckner-Collins et al., 2018; Smitherman, et al., 2019). Additionally, faculty members provide clinical services to the community, participate in research programs within the institution, which is a massive industry for medical advancements and clinical trials (Smitherman et al., 2019). Understanding the

predictors and particular factors that influence faculty intent to leave academic medicine enable academic medicine leadership and human resources leaders the ability to implement appropriate policies and strategies to influence a more satisfying work environment, lowering stress levels and decreasing intent to leave.

I used the perceived stress scale and an intent to leave questionnaire to examine the likelihood of faculty intent to leave academic medicine with correlations of faculty age and faculty stress. Stress was a significant indicator; however, age was not. The insignificant variable age caused the model to accept the null hypothesis. Other predicted variables examined that did not reach significance were faculty rank, the timeframe of intent to leave the institution, years of service at the institution, and gender. However, the department employed, hours worked, and the level of stress measured through the perceived stress scale did have a relationship with intent to leave academic medicine.

There are several recommendations for academic medical institution leaders and human resources leadership to acknowledge and implement to reduce faculty intention to leave. Succession planning could be used to provide growth and advancement for faculty members while decreasing the cost of recruitment and orientation. Another recommendation is continuing education and leadership development. During bi-annual or annual evaluations, the institution has the opportunity to identify faculty that are interested and have the initiative to advance into physician-executive roles (Mullangi et al., 2020). Hiring additional faculty and administrative support specialist would be recommendations for institutional leaders to use as a metric to lessen intent to leave and reduce stress with faculty. Adequate administrative support and shared responsibilities

among faculty can decrease stress levels (Rao et al., 2017) and decrease faculty intent to leave (Gottlieb & Travis, 2018; Papadimos, 2019). Lastly, effective and transparent communication is the final recommendation to reduce intention to leave. Effective and transparent communication could improve relationships, guide personal career development, and executive skill acquisition (Viera & Kramer, 2016).

Disseminating this study through the ProQuest/UMI dissertation database and peer-reviewed journals will provide access to other scholars and researchers. Additionally, the study will be accessible to the leadership of the study location, as requested. Sharing the findings of this study could educate other academic institutions and healthcare leadership of the relationship between intention to leave academic medicine and specific variables. Furthermore, this may empower leadership to implement strategies and methodologies to improve intention to leave and perceived stress by enhancing the environment, the culture, and the business structure, all of which will enhance the profitability of clinics and academic programs, improve patient care, and peer-to-peer relationships.

# References

A.A.M.C. (2019). The road to becoming a doctor. https://www.aamc.org/download/68806/data/road-doctor.pdf

Academic medical institution. (2019). Association of American Medical Colleges. [definition]. https://www.aamc.org/

Acevedo, A. (2015). A personalistic appraisal of Maslow's needs theory of motivation: From "humanistic" psychology to integral humanism. *Journal of Business Ethics, 148*(4). https://doi.org/10.1007/s10551-015-2970-0

Al-Abri, R. (2007). Managing change in healthcare. *Oman Medical Journal, 22*(3), 9-10 https://doi.org/ 10.1067/omj_

Albert, L. S., Reynolds, S. J., & Turan, B. (2014). Turning inward or focusing out? Navigating theories of interpersonal and ethical cognitions to understand ethical decision-making. *Journal of Business Ethics, 130*(2). https://doi.org/10.1007/s10551-014-2236-2

Allen, G. P., Moore, W. M., Moser, L. R., Neill, K. K., Sambamoorthi, U., & Bell, H. S. (2016). The role of servant leadership and transformational leadership in academic pharmacy. *American Journal of Pharmaceutical Education, 80*(7). https://doi.org/10.5688/ajpe807113

Allen, M. (2017). Purpose of quantitative research. *The Sage Encyclopedia of Communication Research Methods*. https://doi.org/10.41359781483381411.n476

Alston, C., Berger, Z., Brownlee, S., Elwyn, G., Fowler, F. J., & … Henderson, D. (2014). Shared decision-making strategies for best care: Patient decision aids.

*National Academy of Medicine Perspectives, 4*(9), 1-54. https://doi.org/10.31478/201409f

American Association for Public Opinion Research. (2020). Best practices for survey research. https://aapor.org/standards-ethics/best-practices.aspx

Andersen, J. A. (2018). Managers' motivation profiles: Measurement and application. *SAGE Open, 8*(2). https://doi.org/10.11772/2158244018771732

Assefa, T., Haile Mariam, D., Mekonnen, W., & Derbew, M. (2017). Survival analysis to measure turnover of the medical education workforce in Ethiopia. *Human Resources Health, 15*(1), 23-35. https://doi.org/10.1186/s12960-017-0197-0

Austin, C. L., Saylor, R., & Finley, P. J. (2017). Moral distress in physicians and nurses: Impact on professional quality of life and turnover. *Psychological Trauma: Theory, Research, Practice, and Policy, 9*(4). https://doi.org/10.1037/tra0000201

Barnes, L. L. B., Agago, M. O., & Cooms, W. T. (1998). Effects of job related stress on faculty intention to leave academia. *Research in Higher Education, 39*(4). https://doi.org/10.1023/A:1018741404199

Bayl-Smith, P. H., & Griffin, B. (2014). Age discrimination in the workplace: identifying as a late-career worker and its relationship with engagement and intended retirement age. *Journal of Applied Social Psychology, 44*(9). https://doi.org/10.1111/jasp.12251

Beck, D., & Cowan, C. (1996). *Spiral dynamics: Mastering values, leadership, and change.* Blackwell.

Belle, N., & Cantarelli, P. (2017). What causes unethical behavior? A meta-analysis to set an agenda for public administration research. *Public Administration Review, 77*(3). https://doi.org/10.1111/puar.12714

Belrhiti, Z., Van Damme, W., Belalia, A., & Marchal, B. (2019). The effect of leadership on public service motivation: a multiple embedded case study in Morocco. *BMJ Open, 10*(1). https://doi.org/10.1136/bmjopen-2010-033010

Benjamin, E. (2018). Some implications of tenure for the profession and society. American Association of University Professors. https://www.aaup.org

Bridgman, T., Cummings, S., & Ballard, J. A. (2017). Triangulating Maslow's hierarchy of needs: The construction of management studies' famous pyramid. *Academy of Management Learning & Education.* [Abstract]. https://doi.org/10.5465/AMBPP.2017.14177abstract

Bridgman, T., Cummings, S., & Ballard, J. (2019). Who built Maslow's pyramid? A history of the creation of management studies' most famous symbol and it's implications for management education. *Academy of Management Learning & Education, 18*(1), 81-98. https://doi.org/10.5465/amle.2017.0351

Brod, H. C., Lemeshow, S., & Binkley, P. F. (2017). Determinants of faculty departure in an Academic Medical Center: A time to event analysis. *American Journal of Medicine, 130*(4). https://doi.org/10.1016/j.amjmed.2016.12.011

Brown, G. E., Bharwani, A., Patel, K. D., & Lemaire, J. B. (2016). An orientation to wellness for new faculty of medicine members: Meeting a need in faculty

development. *International Journal of Medical Education, 7*. https://doi.org/10.5116/ijme.578a.2064

Brueckner-Collins, J. K., Stratton, T. D., & Conigliaro, R. L. (2018). Inspiring the next generation of academic physicians: the academic health careers program. *Medical Education Online, 23*(1). https://doi.org/10.1080/10872981.2018.1530559

Bucklin, B. A., Valley, M., Welch, C., Vu Tran, Z., & Lowenstein, S. R. (2014). Predictors of early faculty attrition at one Academic Medical Center. *B.M.C. Medical Education, 14*(27). https://doi.org/10.1186/1472-6920-14-27

Bucur, E., Danet, A. F., Lehr, C. B., Lehr, E., & Nita-Lazar, M. (2017). Binary logistic regression-instrument for assessing museum indoor air impact on exhibits. *Journal of the Air and Waste Management Association, 67*(4). https://doi.org/10.1080.10962247.2016.1231724

Buhse, S., Rahn, A. C., Bock, M., & Muhlhauser, I. (2018). Causal interpretation of correlational studies-Analysis of medical news on the website of the official journal for German physicians. *PlosONE, 13*(5). https://doi.org/10.1371/journal.pone.0196833

Bujang, M. A., Sa'at, N., Sidik, T., & Joo, L. C. (2018). Sample size guidelines for logistic regression from observational studies with large population: Emphasis on the accuracy between statistics and parameters based on real life clinical data. *The Malaysian Journal of Medical Sciences. 25*(4), 122-130. https://doi.org/10.21315/mjms2018.25.4.12

Burns, K. H., Borowitz, M. J., Carroll, K. C., Gocke, C. D., Hooper, J. E., Amukele, T., … Hruban, R. H. (2018). The evolution of earned, transparent, and quantifiable faculty salary compensation: The John Hopkins Pathology Experience. *Academic Pathology*, *5*. https://doi.org/10.1177/2374289518777463

Butcher, L. (2018). A real education for future doctors: Dealing with debt. *American Association for Physician Leadership*. Retrieved from physicianleaders.org

Butters, A. (2015). A brief history of spiral dynamics. *Approaching Religion, 5*(2), 66-78. https://doi.org/10.30664/ar.67574

Califf, R. M., & Pearson, T. A. (2019). Predictive analytics and implementation research (PAIR): Charting a research agenda for the 21st century workshop-Executive Summary. National Heart, Lung, and Blood Institute. [Conference]. https://www.nhlbi.nih.gov/events/2019/predictive-analytics-and-implementation-research-pair-charting-research-agenda-21st

Centers for Disease Control and Prevention. (2018). The National Institute for Occupational Safety and Health (NIOSH). https://www.cdc.gov/niosh/docs/99-101/default.html

Chen, Y., Gupta, A., & Hoshower, L. (2013). Faculty perceptions of research rewards. *Journal of College Teaching and Learning. 1*(12). https://doi.org/10.19030/tlc.v1i12.2013

Clark, T., Corral, J., Nyberg, E., Bang, T., Trivedi, P., Sachs, P, … & Rumack, C. (2018). Launchpad for onboarding new faculty into academic life. *Current Problems in Diagnostic Radiology, 47*, 72-74. https://doi.org/10.1067/j.cpradiol.2017.04.010

Cohen, L., Manion, L., & Morrison, K. (2017). *Research methods in education* (6th ed.). New York, NY.

Cohen, S. (1994). Perceived Stress Scale. Mind Garden, Inc. https://www.mindgarden.com/

Cohen, S. (2008). Perceived Stress Scale. Carnegie Mellon University. https://www.cmu.edu/dietrich/psychology/stress-immunity-disease-labs/scales/

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4). www-stor-org/journal/jhealsocibeha/i310965

Cohen, S., & Williamson, G. (1988). *Perceived stress in a probability sample of the United States: The social psychology of health*. Newbury Park, CA.

Conley, S., & You, S. (2013). Role stress revisited. *Educational Management Administration & Leadership, 42*(2). https://doi.org/10.1177/1741143213499264

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches.* Los Angeles, CA

Crouzevialle, M., Smeding, A., & Butera, F. (2015). Striving for excellence sometimes hinders high achiever: Performance-approach goals deplete arithmetical performance in students with high working memory capacity. *PloS one, 10*(9). https://doi.org/10.1371/journal.pone.0137629

Dandar, V. M., Grigsby, R. K., & Bunton, S. A. (Eds.). (2019). Proceedings from The Association of American Medical Colleges. *Analysis in Brief: Burnout among U.S. medical school faculty, 19*(1). https://www.aamc.org/

Daniel, E. (2016). The usefulness of qualitative and quantitative approaches and methods in researching problem-solving ability in science education curriculum. *Journal of Education and Practice, 7*(15), 91-100. eric.ed.gov/?id=EJ1103224

Daniel, H., Bornstein, S. S., & Kane, G. C. (2018). Addressing social determinants to improve patient care and promote health equity: An American College of physicians position paper. *Annals of Internal Medicine, 168*(8). https://doi.org/10.7326/M17-2441

DataUSA Website. (2019). Physician and Surgeons. https://datausa.io/profiles/soc/physicians-surgeons

de Oliveira Vasconcelos Filho, P., de Souza, M. R., Elias, P. E., & D'Avila Viana, A. L. (2016). Physicians' job satisfaction and motivation in a public academic hospital. *Human Resources for Health, 14*(1), 75-86. https://doi.org/10.1186/s12960-016-0169-9

DeCarlo, M. (2018). *Scientific inquiry in social work*. (4th ed.). Creative Commons Attribution.

Deckop, J. R., Giacalone, R. A., & Jurkiewicz, C. L. (2015). Materialism and workplace behaviors: Does wanting more result in less? *Social Indicators Research, 121*(3). https://doi.org/10.1007/s11205-014-0661-3

Degen, C., Li, J., & Angerer, P. (2015). Physicians' intention to leave direct patient care: an integrative review. *Human Resources for Health, 13*(1), 74-86. https://doi.org/10.1186/s12960-015-0068-5

Demmy, T. L., Kivlahan, C., Stone, T. T., League, L., & Sapienza, P. (2002). Physicians' perceptions of institutional and leadership factors influencing their job satisfaction at one academic medical center. *Academic Medicine, 77*(12). https://doi.org/10.1097/00001888-200212000-00020

Dewa, C. S., Loong, D., Bonato, S., Thanh, N. X., & Jacobs, P. (2014). How does burnout affect physician productivity? A systematic literature review. *B.M.C. Health Services Research, 14*, 325-336. https://doi.org/10.1186/1472-6963-14-325

Dobre, O. (2013). Employee motivation and organizational performance. *Review of Applied SocioEconomic Research, 5*(1), 53. http://www.reaser.ue

Dotan, G., Qureshi, H. M., Saraf, S. S., & Darnley-Fisch, D. A. (2018). Leadership of United States academic departments of ophthalmology: Chairperson characteristics, accomplishments, and personal insights. *American Journal of Ophthalmology, 186*, 69-76. https://doi.org/10.1016/j.ajo.2017.10.024

Donkers, H. (2016). Integral Dynamics, A new integration of Wilber's integral theory and spiral dynamics. *International Journal of Humanities and Social Science, 6*(6), 86-106. Ijhssnet.com/journals /Vol_6_No_6_June_2016/10.pdf

Dyrbye, L., & Shanafelt, T. (2016). A narrative review on burnout experienced by medical students and residents. *Medical Education, 50*(1), 132-149. https://doi.org/10.1111/medu.12927

Dzau, V. J., Kirch, D. G., & Nasca, T. J. (2018). To care is human - collectively confronting the clinician-burnout crisis. *New England Journal of Medicine, 378*(4). https://doi.org/10.1056/NEJMp1715127

Ede, S. (2013). Spiral Dynamics-A way of understanding human nature. Crux Catalyst. http://www.cruxcatalyst.com/2013/09/26/spiral-dynamics-a-way-of-understanding-human-nature/

Edson, M. C., & Klein, L. (2017). Problem structuring and research design in systemic inquiry. In: Edson, M., Buckle Henning, P., Sankaran S. (eds). *A Guide to Systems Research: Translational Systems Sciences, 10*. Springer: Singapore. https://doi.org/10.1007/978-987-10-0263-2_3

El-Ibiary, S. Y., Yam, L., & Lee, K. C. (2017). Assessment of burnout and associated risk factors among pharmacy practice faculty in the United States. *American Journal of Pharmaceutical Education, 81*(4). https://doi.org/10.5688/ajpe81475

Ernst, A. F., & Albers, C. J. (2017). Regression assumptions in clinical psychology research practice-a systematic review of common misconceptions. *PeerJ, 5*, e3323. https://doi.org/10.7717/peerj.3323

Farrugia, P., Petrisor, B. A., Farrokhyar, F., & Bhandari, M. (2010). Research questions, hypotheses and objectives. *Canadian Journal of Surgery, 53*(4). canjsurg.com/vol53-issue4/53-4-278/

Fatima, T., Malik, S. A., & Shabbir, A. (2018). Hospital healthcare service quality, patient satisfaction, and loyalty. *International Journal of Quality and Reliability Management, 35*(6). https://doi.org/10.1108/IJQRM-02-2017-0031

Ferreira, T. S. (2017). Motivational factors in sales team management and their influence on individual performance. *Tourism & Management Studies, 13*(1), 60-65. https://doi.org/10.18089/tms.2017.13108

Fincham, J. E. (2008). Response rates and responsiveness for surveys, standards, and the journal. *American Journal of Pharmaceutical Education. 72*(2), 43-46. https://doi.org/10.5688/aj720243

Flatt, C., & Jacobs, R. L. (2019). Principle assumptions of regression analysis: Testing, techniques, and statistical reporting of imperfect data sets. *Advances in Developing Human Resources, 21*(4). https://doi.org/10.1177/1523422319869915

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden and build theory in positive emotions. *American Psychologist, 56*(3). https://doi.org/10.1037/0003-066x.56.3.218

Ghaffari, S., Mad Shah, I., Burgoyne, J., Nazri, M., & Salah Aziz, J. S. (2017). Investigating the mediation role of respect for employees on the relationship between participative leadership and job satisfaction: A case study at University Teknologi Malaysia. *Australian Journal of Basic Applied Sciences, 11*, 17-28. www.ajbasweb.com

Gibson, C., Medeiros, K. E., Giorgini, V., Mecca, J. T., Devenport, L. D., Connelly, S., … & Mumford, M. D. (2014). A qualitative analysis of power differentials in ethical situations in academia. *Ethics and Behavior, 24*(4), 311-325. https://doi.org/10.1080/10508422.2013.858605

Girod, S. C., Fassiotto, M., Menorca, R., Etzkowitz, H., & Wren, S. M. (2017). Reasons for faculty departures from an academic medical center: a survey and comparison across faculty lines. *B.M.C. Medical Education, 17*(1), 8-18. https://doi.org/10.1186/s12909-016-0830-y

Gottlieb, A. S., & Travis, E. L. (2018). Rationale and models for career advancement sponsorship in academic medicine: The time is here; the time is now. *Academic Medicine, 93*(11). https://doi.org/10.1097/ACM.0000000000002342

Graves, C. W. (1970). Levels of existence: an open system theory of values. *Journal of Humanistic Psychology, 10*(2). https://doi.org/10.1177/002216787001000205

Greenland, S., Senn, S. J., Rothman, K. J., Carlin, J. B., Poole, C., & … Altman, D. G. (2016). Statistical tests, P values, confidence intervals, and power: a guide to misinterpretations. *European Journal of Epidemiology, 31*(4). https://doi.org/10.1007/s10654-016-0149-3

Guetterman, T. C. (2019). Basics of statistics for primary care research. *Family Medicine and Community Health, 7*(2). https://doi.org/10.1136/fmch-2018-0000067

Gunasingam, N., Burns, K., Edwards, J., Dinh, M., & Walton, M. (2015). Reducing stress and burnout in junior doctors: the impact of debriefing sessions. *Postgraduate Medical Journal, 91*(1074). https://doi.org/10.1136/postgradmedj-2014-132847

Hafferty, F. W. (2017). Academic medicine and medical professionalism: A legacy and a portal into an evolving field of educational scholarship. Academic Medicine: *Journal of the Association of American Medical Colleges. 93*(4). https://doi.org/10.1097/ACM.0000000000001899

Hall, D. E., Pochazka, A. V., & Fink, A. S. (2012). Informed consent for clinical treatment. *Canadian Medical Association Journal, 184*(5). https://doi.org/10.1503/cmaj.112120

Hamidi, M. S., Bohman, B., Sandborg, C., Smith-Coggins, R., de Vries, P., Albert, M. S., . . . Trockel, M. T. (2018). Estimating institutional physician turnover attributable to self-reported burnout and associated financial burden: a case study. *B.M.C. Health Service Research, 18*(1), 851-860. https://doi.org/10.1186/s12913-018-3663-z

Hamilton, J. J., & Hopkins, R. S. (2018). Using technologies for data collection and management. *The C.D.C. Field Epidemiology Manual*. Centers for Disease Control and Prevention. www.cdc.gov/eis/field-epi-manual/

Hammig, O. (2018). Explaining burnout and the intention to leave the profession among health professionals-a cross-sectional study in a hospital setting in Switzerland. *B.M.C. Health Services Research, 18*(1), 785-796. https:doi.org/10.1186/s12913-018-3556-1

Han, S., & Humphreys, G. (2016). Self-construal: a cultural framework for brain function. *Current Opinion in Psychology, 8,* 10-14. https://doi.org/10.1016/j.copsych.2015.09.013

Haras, C., Taylor, S. C., Sorcinelli, M. D., & von Hoene, L. (2017). *Institutional Commitment to Teaching Excellence: Assessing the impacts and outcomes of faculty development*. American Council on Education. acenet.edu/Documents/Institutional-Commitment-to-Teaching-Excellence.pdf

Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence Based Nursing, 18*(3). https://doi.org/10.1136/eb-2015-102129

Heponiemi, T., Hypponen, H., Kujala, S., Aalto, A. M., Vehko, T., Vanska, J., & Elovainio, M. (2018). Predictors of physicians' stress related to information systems: a nine-year follow-up survey study. *B.M.C. Health Services Research, 18*(1), 284-293. https://doi.org/10.1186/s12913-018-3094-x

Hornsey, M. J., Greenaway, K. H., Harris, E. A., & Bain, P. G. (2019). Exploring cultural differences in the extent to which people perceive and desire control. *Personality and Social Psychology Bulletin, 45*(1), 81-92. https://doi.org/10.1177/0146167218780692

Huitt, W. (2007). Maslow's hierarchy of needs. Educational Psychology Interactive. Valdosta, GA: Valdosta State University. http://www.edpsychinteractive.org/topics/regsys/maslow.html

Hung, M., Bounsanga, J., & Voss, M. W. (2017). Interpretation of correlations in clinical research. *Postgraduate Medicine, 129*(8). https://doi.org/10.1080/00325481.2017.1383820

Jackson, S. A., Kleitman, S., Howie, P., & Stankov, L. (2016). Cognitive abilities, monitoring confidence, and control thresholds explain individual differences in heuristics and biases. *Frontiers in Psychology, 7*. https://doi.org/10.3389/fpsyg.2016.01559

Jeanmonod, R. (2016). Retaining talent at academic medical centers. *International Journal of Academic Medicine, 2*(1), 56-51. https://doi.org/10.4103/2455-5568.183323

Jeffers, S., & Mariani, B. (2017). The effect of a formal mentoring program on career satisfaction and intent to stay in the faculty role for novice nurse faculty. *Nursing Education Perspectives, 38*(1), 18-22. https://doi.org/10.1097/01.NEP.0000000000000104

Jenkins, D. A., Sperrin, M., Martin, G. P., & Peek, N. (2018). Dynamic models to predict health outcomes: current status and methodological challenges. *Diagnostic and Prognostic Research, 2*(1), 23-32. https://doi.org/10.1186/s41512-018-0045-2

Jones, T. L., Baxter, M. A. J., & Khanduja, V. (2013). A quick guide to survey research. *The Royal College of Surgeons of England. 95*(1), 5-7. https://doi.org/10.1308/003588413x13511609956372

Kantrowitz-Gordon, I. (2018). Factor structure and external validity of the five facet mindfulness questionnaire in pregnancy. *Mindfulness, 9*. https://doi.org/10.1007/s12671-017-0768-0

Karnieli-Miller, O., Vu, R., Holtman, M. C., Clyman, S. G., & Inui, T. S. (2010). Medical students' professionalism narratives: A window on the informal and hidden curriculum. *Academic Medicine, 85*(1), 124-133. https://doi.org/10.1097/ACM.0b013e3181c42896

Khurana, H., & Joshi, V. (2017). Individual performance: A comparative study based on McClelland's three need model. *International Journal of Research in Commerce and Management, 8*(7), 110-116. ijrcm.org.in/commerce/index.php

Kim, H., & Rehg, M. (2018). Faculty performance and morale in higher education: A systems approach. *Systems Research and Behavioral Science, 35*(3). https://doi.org/10.1002/sres.2495

Knight, K. L. (2010). Study/experimental/research design: Much more than statistics. *Journal of Athletic Training, 45*(1), 98-100. https://doi.org/10.4085/1062-6050-45.1.98

Knutsen, O. (1990). Materialist and postmaterialist values and social structure in the Nordic Countries: A comparative study. *Comparative Politics, 23*(1), 85-104. https://doi.org/10.2307/422306

Kok, B. E., Coffey, K. A., Cohn, M. A., Catalino, L. I., Varcharkulksemsuk, T., Algoe, S. B., … & Fredrikson, B. L. (2013). How positive emotions build physical health: Perceived positive social connections account for the upward spiral between positive emotions and vagal tone. *Psychological Science, 24*(7). https://doi.org/10.1177/0956797612470827

Konstam, M. A., Hill, J. A., Kovacs, R. J., Harrington, R. A., Arrighi, J. A., & Khera, A. (2017). The academic medical system: Reinvention to survive the revolution in health care. *Journal of the American College of Cardiology, 69*(10). https://doi.org/10.1016/j.jacc.2016.12.024

Krefeld-Schwalb, A., Witte, E. H., & Zenker, F. (2018). Hypothesis-testing demands trustworthy data-A simulation approach to inferential statistics advocating the research program strategy. *Frontiers in Psychology, 9*(460), 1-14. https://doi.org/10.3389/fpsyg.2018.00460

Lachmann, M., Trapp, I., & Trapp, R. (2017). Diversity and validity in positivist management accounting research-A longitudinal perspective over four decades: A longitudinal perspective over four decades. *Management Accounting Research, 34*, 42-58. https://doi.org/10.1016/j.mar.2016.07.002

Langstedt, J. (2018). Culture an excuse? – A critical analysis of essentialist assumptions in cross-cultural management research and practice. *International Journal of Cross Cultural Management, 18*(3). https://doi.org/10.1177/1470595818793449

Lau, F., & Kuziemsky, C. (2017). *Handbook of eHealth Evaluation: An evidence-based approach*. Victoria, British Columbia

Lee, E. (2014). Review of the psychometric evidence of the Perceived Stress Scale. *Asian Nursing Research. 8*(4). https://doi.org/10.1016/j.anr.2012.08.004

Lee, M. T., & Raschke, R. L. (2016). Understanding employee motivation and organizational performance: Arguments for a set-theoretic approach. *Journal of Innovation and Knowledge, 1*(3). https://doi.org/10.1016/j.jik.2016.01.004

Li, H., Sajjad, N., Wang, Q., Muhammad Ali, A., Khaqan, Z., & Amina, S. (2019). Influence of transformational leadership on employees' innovative work behavior in sustainable organizations: Test of mediation and moderation processes. *Sustainability, 11*(2). https://doi.org/10.3390/su110610594

Liang, Y., Liu, L., Tan, X., Huang, Z., Dang, J., & Zheng, W. (2016). The effects of self-esteem on corrupt intention: The mediating role of materialism. *Frontiers in Psychology, 7*(1), 1063-1074. https://doi.org/10.3389/fsyg.2016.0163

Lim, A. J. P., Loo, J. T. K., & Lee, P. H. (2017). The impact of leadership on turnover intention: The mediating role of organizational commitment and job satisfaction. *Journal of Applied Structural Equation Modeling, 1*(1), 27-41. jasemjournal.com

Lindemann, N. (2019). What's the average survey response rate? [2019 benchmark]. SurveyAnyplace. [Blog post]. www.surveyanyplace.com/average-survey-response-rate/

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

Linzer, M., Poplau, S., Babbott, S., Collins, T., Guzman-Corrdes, L., Menk, J., … Ovhgton, K. (2016). Worklife and wellness in academic general internal medicine: Results from a national survey. *Journal of General Internal Medicine, 31*(9). https://doi.org/10.1007/s11606-016-3720-4

Liu, Y., & Arendt, S. (2016). Development and validation of a work motive measurement scale. *International Journal of Contemporary Hospitality Management, 28*(4). https://doi.org/10.1108/IJCHM-02-2014-0091

Lowenstein, S. R., Fernandez, G., & Crane, L. A. (2007). Medical school faculty discontent: prevalence and predictors of intent to leave academic careers. *B.M.C. Medical Education, 7,* 37-45. https://doi.org/10.1186/1472-6920-7-37

Lu, Y., Hu, X. M., Huang, X. L., Zhuang, X. D., Guo, P., Feng, L. F., . . . Hao, Y. T. (2017). The relationship between job satisfaction, work stress, work-family conflict, and turnover intention among physicians in Guangdong, China: a cross-sectional study. *B.M.J. Open, 7*(5), e014894. https://doi.org/10.1136/bmjopen-2016-014894

Lucas, R., Goldman, E. F., Scott, A. R., & Dandar, V. (2018). Leadership development programs at academic health centers: Results of a national survey. *Academic Medicine, 93*(2). https://doi.org/10.1097/ACM.0000000000001813

Luong, P., Bojansky, A. M., & Kalra, A. (2018). Academic physician compensation in the United States: Should providers' work at academic medical centres be judged by just one metric, the relative value unit (RVU)? *European Heart Journal, 39*. https://doi.org/10.1093/eurheartj/ehy640

McClelland, D. C. (1985). How motives, skills, and values determine what people do. *American Psychologist, 40*(7). https://doi.org/10.1037/0003-066x.40.7.812

McClelland, D. C. (1987). *Human motivation.* Cambridge University Press: Cambridge

McDonald, I. (2010). *Introduction to Spiral Dynamics*. Tattenhall, Chester, United Kingdom.

McGregor, S. L. T. (2017). Understanding and evaluating research: A critical guide. Thousand Oaks, CA.

McLeod, S. (2018). Maslow's hierarchy of needs. *Simply Psychology*. https://www.simplypsychology.com

Manstead, A. S. R. (2018). The psychology of social class: How socioeconomic status impacts thought, feelings, and behaviour. *British Journal of Social Psychology, 57*(2). https://doi.org/10.1111/bjso.12251

Markle-Reid, M., Dykeman, C., Ploeg, J., Stradiotto, C. K., Andrews, A., Bonomo, S., ... & Salker, N. (2017). Collaborative leadership and the implementation of community-based fall prevention initiatives: a multiple case study of public health practice within community groups. *B.M.C. Health Services Research, 17*, 141-143. https://doi.org/10.1186/s12913-017-2089-3

Martin, A. J., Collie, R. J., Durksen, T. L., Burns, E. C., Bostwick, K. C. P., & Tarbetsky, A. L. (2019). Growth goals and growth mindset from a methodological-synergistic perspective: Lessons learned from a quantitative correlational research program. *International Journal of Research & Method in Education, 42*(2). https://doi.org/10.1080/1743727x.2018.1481938

Martínez-Mesa, J., González-Chica, D. A., Duquia, R. P., Bonamigo, R. R., & Bastos, J. L. (2016). Sampling: how to select participants in my research study?. *Anais brasileiros de dermatologia, 91*(3). https://doi.org/10.1590/abd1806-4841.20165254

Maslow, A. H. (1987). *Motivation and Personality* (3rd ed.). Delhi, India

Melé, D. (2016). Understanding humanistic management. *Journal of Humanistic Management, 1*, 33-55. https://doi.org/10.1007/s41463-016-0011-5

Mitchell, T. R. (1985). An evaluation of the validity of correlational research conducted in organizations. *Academy of Management Review. 10*(2). https://doi.org/10.2307/257962

Mishra, P., Pandey, C. M., Singh, U., & Gupta, A. (2018). Scales of measurement and presentation of statistical data. *Annals of Cardiac Anaesthesia, 21*(4). https://doi.org/10.4103/aca.ACA_131_18

Mitra, S., Sakar, A. P., Haldar, D., Saren, A. B., Lo, S., & Sarkar, G. N. (2018). Correlation among perceived stress, emotional intelligence, and burnout of resident doctors in a medical college of West Bengal: A mediation analysis. *Indian Journal of Public Health, 62*(1), 27-31. https://doi.org/10.4103/ijph.IJPH_368_16

Mohajan, H. K. (2017). Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University, 17*(3), 58-82. https://mpra.ub.uni-muenchen.de/83458/

Mullane, K., & Williams, M. (2013). Bias in research: the rule rather than the exception? Discussing some of the causes and prevalence of bias in the fields of biomedical research. *Biochemical Pharmacology*. journals.elsevier.com/biochemical-pharmacology

Mullangi, S., Blutt, M. J., & Ibrahim, S. (2020). Is it time to reimagine academic promotion and tenure? *JAMA Health Forum*. https://doi.org/10.1001/jamahealthforum.2020.0164

Ng, T. W. H., Yam, K. C., & Aguinis, H. (2019). Employee perceptions of corporate social responsibility: Effects on pride, embeddedness, and turnover. *Personnel Psychology, 72*(1), 107-137. https://doi.org/10.1111/peps.12294

Nielsen, M. G., Ornbol, E., Vestergaard, M., Larsen, F. B., Masgaard, M., & Christensen, K. S. (2016). The construct validity of the Perceived Stress Scale. *Journal of Psychosomatic Research, 84*. https://doi.org/10.1016/j.jpsychores.2016.03.009

Papadimos, T. J. (2019). Academic succession planning: A US perspective. *Leadership in Academic Medicine, 5*(1), 71-74. https://doi.org/10.4103/IJAM.IJAM_17_18

Patel, V. M., Ashrafian, H., Uzoho, C., Nikiteas, N., Panzarasa, P., Sevdalis, N., . . . Athanasiou, T. (2016). Leadership behaviours and healthcare research performance: prospective correlational study. *Postgraduate Medical Journal, 92*(1093). https://doi.org/10.1136/postgradmedj-2016-134088

Pedrazza, M., Berlanda, S., Trifiletti, E., & Bressan, F. (2016). Exploring physicians' dissatisfaction and work-related stress: Development of the PhyDis Scale. *Frontiers in Psychology, 7*, 1238-1251. https://doi.org/10.3389/fpsyg.2016.01238

Pololi, L., Conrad, P., Knight, S., & Carr, P. (2009). A study of the relational aspects of the culture of academic medicine. *Academic Medicine, 84*(1), 106-114. https://doi.org/10.1097/acm.0b013e3181900efc

Pololi, L. H., Krupat, E., Civian, J. T., Ash, A. S., & Brennan, R. T. (2012). Why are a quarter of faculty considering leaving academic medicine? A study of their perceptions of institutional culture and intentions to leave at 26 representative

U.S. medical schools. *Academic Medicine, 87*(7). https://doi.org/10.1097/ACM.0b013e3182582b18

Ponto, J. (2015). Understanding and evaluating survey research. *Journal of the Advanced Practitioner in Oncology, 6*(2), 168-171. https://doi.org/10.6004/jadpro.2015.6.2.9

Price, P. C., Jhangiani, R. S., & Chiang, I. A. (2015). *Research methods in psychology* (2nd ed.). Washington, DC

Quaintance, J. L., Arnold, L., & Thompson, G. S. (2010). What students learn about professionalism from faculty stories: An "appreciative inquiry" approach. *Academic Medicine, 85*(1), 118-123. https://doi.org/10.1097/AMC.0b013e3181c42acd

Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues, and instruments development. *International Journal of Economics and Management Sciences. 6*(2). https://doi.org/10.4172/2162-6359.1000403

Rakofsky, J. J., Dallaghan, G. B., & Balon, R. (2018). Measuring burnout among psychiatry clerkship directors., *Academy of Psychiatry 42*(1), 68-72. https://doi.org/10.1007/s40596-017-0805-2

Ranganathan, P., Pramesh, C. S., & Aggarwal, R. (2017). Common pitfalls in statistical analysis: Logistic regression. *Perspectives in Clinical Research, 8*(3). https://doi.org/10.4103/picr.PICR_87_17

Rao, S. K., Kimball, A. B., Lehrhoff, S. R., Hidrue, M. K., Michael, K., Colton, D. G., … Torchiana, D. F. (2017). The impact of administrative burden on academic physicians: Results of a hospital-wide physician survey. *Academic Medicine, 92*(2). https://doi.org/10.1097/ACM.0000000000001461

Ratna, H. (2019). The importance of effective communication in healthcare practice. *Harvard Public Health Review, 23*. www.harvardpublichealthreview.org/healthcommunication

Rittenhouse, D. R., Mertz, E., Keane, D., & Grumbach, K. (2004). No exit: An evaluation of measures of physician attrition. *Health Services Research, 39*(5). https://doi.org/10.1111/j.1475-6773.2004.00304.x

Ross, P. T., & Bibler Zaidi, N. L. (2019). Limited by our limitations. *Perspectives on Medical Education, 8*(4). https://doi.org/10.1007/s40037-019-00530-x

Roy, A., van der Weijden, T., & de Vries, N. (2017). Relationships of work characteristics to job satisfaction, turnover intention, and burnout among doctors in the district public-private mixed health system of Bangladesh. *B.M.C. Health Services Research, 17*(1), 421-432. https://doi.org/10.1186/s12913-017-2369-y

Rybnicek, R., Bergner, S., & Gutschelhofer, A. (2019). How individual needs influence motivation effects: a neuroscientific study on McClelland's need theory. *Review of Managerial Science, 13.* https://doi.org/10.1007/s11846-017-0252-1

Saleh, A., & Bista, K. (2017). Examining factors impacting online survey response rates in educational research: Perceptions of graduate students. *Journal of*

*MultiDisciplinary Evaluation. 13*(29), 63-74. journals.sfu.ca/jmde/index.php/jmde_1/article/view/487

Sanfillippo, F., Powell, D., Folberg, R., & Tykocinski, M. (2018). Dealing with Deans and academic medical center leadership. *Academic Pathology*, *5*. https://doi.org/10.1177/2374289518765462

Saunders, M., Lewis, P., & Thornhill, A. (2015). *Research methods for business students*. (7th ed.). Essex, England

Schneider, M. (2017). Spiral dynamics-Transforming business and life. Evolution Management. https://evolution-management.net/spiral-dynamics-2/

Schoonenboom, J., & Johnson, R. B. (2017). How to construct a mixed methods research design. *Köln Z Soziol*, *69*(Suppl2), 107-131. https:doi.org/10.1007/s11577-017-0454-1

Scotland, J. (2012). Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of scientific, interpretive, and critical research paradigms. *English Language Teaching*, *5*(9), 9-16. https://doi.org/10.5539/elt.v5n9p9

Shanafelt, T. D., Dyrbye, L. N., & West, C. P. (2017). Addressing physician burnout: The way forward. *Journal of the American Medical Association, 317*(9). https://doi.org/10.1001/jama.2017.0076

Shanafelt, T., Goh, J., & Sinsky, C. (2017). The business case for investing in physician wellbeing. *Journal of the American Medical Association, Internal Medicine, 177*(12). https://doi.org/10.1001/jamainternmed.2017.4340

Shanafelt, T. D., Hasan, O., Dyrbye, L. N., Sinsky, C., Satele, D., Sloan, J., & West, C. P. (2015). Changes in Burnout and Satisfaction With Work-Life Balance in Physicians and the General US Working Population Between 2011 and 2014. *Mayo Clinic Proceedings*, *90*(12). https://doi.org/10.1016/j.mayocp.2015.08.023

Shahrawat, A., & Shahrawat, R. (2017). Application of Maslow's hierarchy of needs historical context: Case studies of four prominent figures. *Psychology*, 8. https://doi.org/10.236/psych.2017.87061

Shaw, J. D. (2017). Advantages of starting with theory. *Academy of Management Journal*, *60*(3). https://doi.org/10.5465/amj.2017.4003

Shorten, A., & Smith, J. (2017). Mixed methods research: expanding the evidence base. *Evidence-Based Nursing*, *20*(3). https://doi.org/10.1136/eb-2017-102699

Sihag, V., & Rijsdijk, S. A. (2018). Organizational controls and performance outcomes: A meta-analytic assessment and extension. *Journal of Management Studies, 56*(1), 91-134. https://doi.org/10.1111/joms.12342

Silver, M. P., & Williams, S. A. (2018). Reluctance to retire: A qualitative study on work identity, intergenerational conflict, and retirement in academic medicine. *The Gerontologist, 58*(2). https://doi.org/10.1093/geront/gnw142

Smitherman, H. C., Baker, R. S., & Wilson, M. R. (2019). Socially accountable academic health centers: Pursuing a quadripartite mission. *Journal of the Association of American Medical Colleges, 94*(2). https://doi.org/10.1097/ACM.0000000000002486

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European Journal of Psychotraumatology*, *5*(1), 1-14. https://doi.org/10.3402/ejpt.v5.25338

Sperandei, S. (2014). Understanding logistic regression analysis. *Biochemia Medica*, *24*(1), 12-18. https://doi.org/10.11613/BM.2014.003

Stangor, C. (2011). *Research methods for the behavioral sciences*. (4th ed.). Mountain View, CA

Stevens, S. S. (1946). On the theory of scales of measurement. *Science, New Series*, *103*(2684). https://doi.org/10.1126/science.103.2684.677

Taber, K. S. (2018). The use of Cronbach's Alpha when developing and reporting research instruments in science education. *Research in Science Education*, *48*(6). https://doi.org/10.1007/s11165-016-9602-2

Taylor, C., Farver, C., & Stoller, J. K. (2011). Can emotional intelligence training serve as an alternative approach to teaching professionalism to residents? *Academic Medicine, 86.* https://doi.org/10.1097/ACM.0b013e318235aa76

Teherani, A., Martimianakis, T., Stenfors-Hayes, T., Wadhwa, A., & Varpio, L. (2015). Choosing a qualitative research approach. *Journal of Graduate Medical Education*, *7*(4). https://doi.org/10.4300/JGME-D-15-00414.1

*The Belmont Report*. (1979, April 18). Office of the Secretary: Ethical Principles and Guidelines for the Protection of Human Subjects of Research: The National

Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. https://www.hhs.gov

The World Health Organization. (2016). Open mindsets: Participatory leadership for health. Flagship report 2016. https://apps.who.int/iris/bitstream/handle/10665/251458/9789241511360-eng.pdf;jsessionid=C88705A831850C43E8943176A7DD19BF?sequence=1

Thomson, T. M. (1998). *Management by Objectives. Annual Handbook for Group Facilitators* (20th ed.). San Diego, CA

Tully, M. P. (2014). Research: Articulating questions, generating hypotheses, and choosing study designs. *The Canadian Journal of Hospital Pharmacy, 67*(1), 31-34. https://doi.org/10.4212/cjhp.v61i1.1320

Tur, F. C., Toker, I., Sasmaz, C. T., Hacar, S., & Ture, B. (2016). Occupational stress experienced by residents and faculty physicians on night shifts. *Scandinavian Journal of Trauma, Resuscitation, and Emergency Medicine, 24*, 34-42. https://doi.org/10.1186/s13049-016-0225-4

Uttley, J. (2019). Power analysis, sample size, and assessment of statistical assumptions-improving the evidential value of lighting research. *The Journal of the Illuminating Engineering Society, 15*(2). https://doi.org/10.1080/15502724.2018.1533851

Valosek, L., Link., J., Mills, P., Konrad, A., Rainforth, M., Nidich, S. (2018). Effect of mediation on emotional intelligence and perceived stress in the workplace: A

randomized controlled study. *The Permanente Journal, 22*(4), 10-17. https://doi.org/10.7812/TPP/17-172

Vermeir, P., Vandijck, D., Degroote, S., Peleman, R., Verhaeghe, R., Morier, E., ... Vogelaers, D. (2015). Communication in healthcare: a narrative review of the literature and practical recommendations. *International Journal of Clinical Practice, 69*(11). https://doi.org/10.1111/ijcp.12686

Viera, A. J., & Kramer, R. (2016). *Management and leadership skills for medical faculty, A practical handbook*. Springer Science. https://doi.org/10.1007/978-3-319-27781-3

Volkert, D., Candela, L., & Bernacki, M. (2018). Student motivation, stressors, and intent to leave nursing doctoral study: A national study using path analysis. *Nurse Education Today, 61,* 210-215. https://doi.org/10.1016/j.nedt.2017.11.033

Vong, L. T.-N., Ngan, H. F. B., & Lo, P. C.-P. (2018). Does organizational climate moderate the relationship between job stress and intent to stay? *Journal of Chinese Human Resources Management, 9*(1), 2-20. https://doi.org/10.1108/jchrm-09-2017-0022

Weisberg, H., Krosnick, J. A., & Bowen, B. D. (1996). *An introduction to survey research, polling, and data analysis.* (3rd ed.).

West, C. P., Dyrbye, L. N., & Shanafelt, T. D. (2018). Physician burnout: contributors, consequences and solutions. *Journal of Internal Medicine, 283*(6). https://doi.org/10.1111/joim.12752

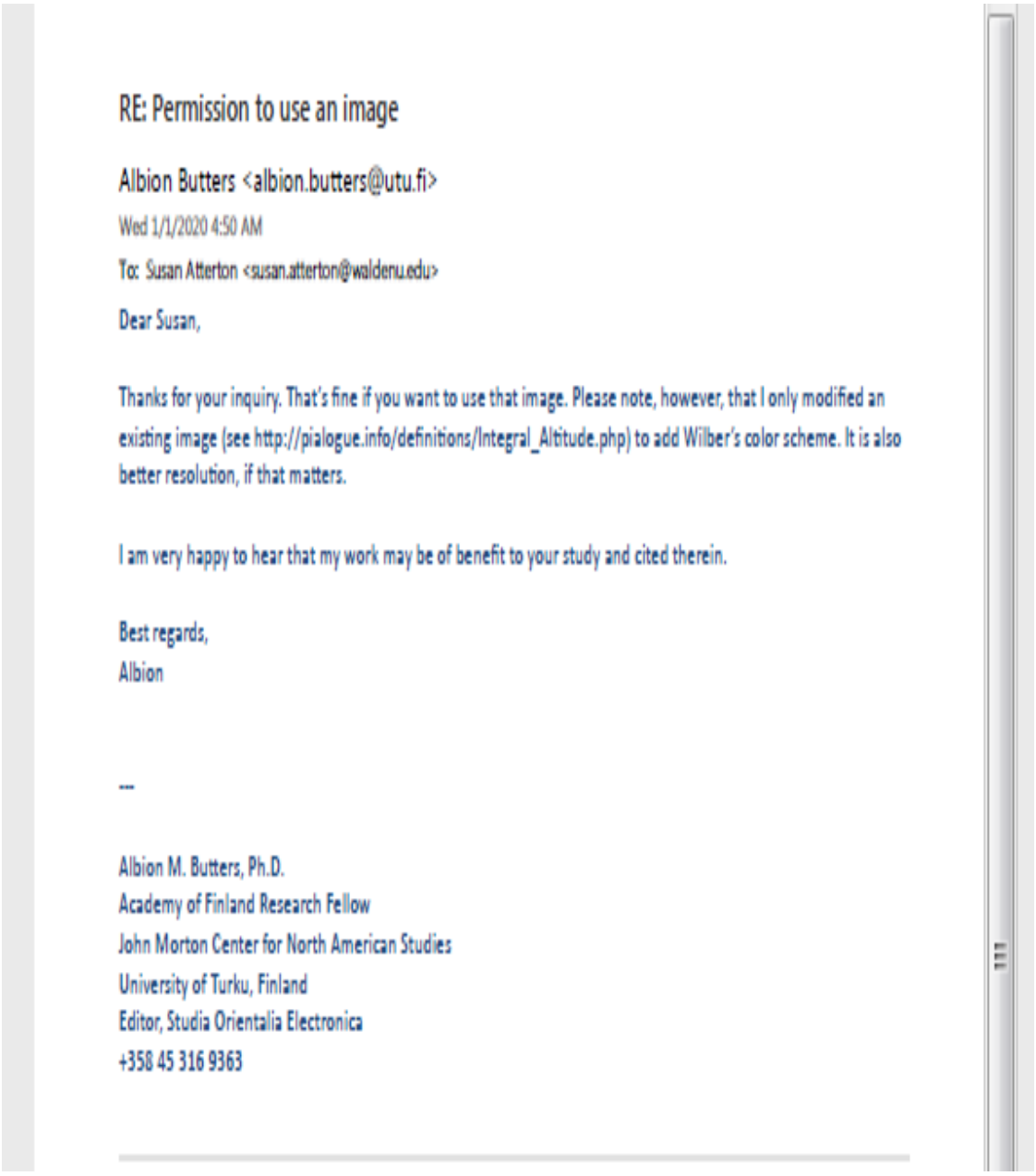
Wong, M. L., Anderson, J., Knorr, T., Joseph, J. W., & Sanchez, L. D. (2018). Grit, anxiety, and stress in emergency physicians. *The American Journal of Emergency Medicine, 36*(6). https://doi.org/10.1016/j.ajem.2018.02.021

Wynia, M. K., Papadakis, M. A., Sullivan, W. M., & Hafferty, F. W. (2014). More than a list of values and desired behaviors: A foundational understanding of medical professionalism. *Academic Medicine, 89*(5). https://doi.org/10.1097/ACM.0000000000000212

Yedidia, M. J., Chou, J., Brownlee, S., Flynn, L., & Tanner, C. A. (2014). Association of faculty perceptions of work-life with emotional exhaustion and intent to leave academic nursing: report on a national survey of nurse faculty. *Journal of Nursing Education, 53*(10). https://doi.org/10.3928/01484834-20140922-03

Yin, R. K. (2018). Case study research and applications: Design and methods. (6th ed.). Thousand Oaks, CA

Appendix A: Permission to Use Figure 1. Levels and color schemes of Spiral Dynamics Theory



RE: Permission to use an image

Albion Butters <albion.butters@utu.fi>

Wed 1/1/2020 4:50 AM

To: Susan Atterton <susan.atterton@waldenu.edu>

Dear Susan,

Thanks for your inquiry. That's fine if you want to use that image. Please note, however, that I only modified an existing image (see http://pialogue.info/definitions/Integral_Altitude.php) to add Wilber's color scheme. It is also better resolution, if that matters.

I am very happy to hear that my work may be of benefit to your study and cited therein.

Best regards,
Albion

---

Albion M. Butters, Ph.D.
Academy of Finland Research Fellow
John Morton Center for North American Studies
University of Turku, Finland
Editor, Studia Orientalia Electronica
+358 45 316 9363

Appendix B: Dr. Cohen’s Permission to use Perceived Stress Scale via his website

https://www.cmu.edu/dietrich/psychology/stress-immunity-disease-lab/scales/index.html

Dr. Cohen's Scales:
We welcome copies (email is OK) of any in press or published papers using any of Dr. Cohen's scales that you are willing to share with us, and thank you in advance for your generosity. They will not be redistributed or linked without your permission.

Permissions: Permission for use of scales is not necessary when use is for nonprofit academic research or nonprofit educational purposes.

Appendix C: Qualtrics Survey (P.S.S. and Intent to Leave)

Doctoral Study by Susan Christian Atterton

**Doctoral Study**

Clicking on the "agree" button below indicates that:
- You have read the consent information
- You voluntarily agree to participate
- You are at least 18 years of age

If you do not wish to participate in the research study, please decline participation by clicking the "disagree" button.

Agree ○ Disagree ○

Gender?

Male ○ Female ○ Other ○

What is your Age?

30-34 ○ 35-39 ○ 40-44 ○ 45-49 ○ 50-54 ○ 55-59 ○ 60-64 ○ 65-69 ○ 70+ ○ Choose Not to Answer ○

In the following questions, please take in to account how you have felt in the last 30 days

How often have you been upset because of something that happened unexpectedly?

Never ○ Almost Never ○ Sometimes ○ Fairly Often ○ Very Often ○

How often have you felt that you were unable to control the important things in your life?

Never ○ Almost Never ○ Sometimes ○ Fairly Often ○ Very Often ○

How often have you felt nervous and "stressed"?

Never ○ Almost Never ○ Sometimes ○ Fairly Often ○ Very Often ○

How often have you felt confident about your ability to handle your personal problems?

Never ○ Almost Never ○ Sometimes ○ Fairly Often ○ Very Often ○

How often have you felt that things were going your way?

Never ○ Almost Never ○ Sometimes ○ Fairly Often ○ Very Often ○

How often have you found that you could not cope with all the things that you had to do?

Never ○ Almost Never ○ Sometimes ○ Fairly Often ○ Very Often ○

How often have you been able to control irritations in your life?

Never ○ Almost Never ○ Sometimes ○ Fairly Often ○ Very Often ○

How often have you felt that you were on top of things?

Never ○ Almost Never ○ Sometimes ○ Fairly Often ○ Very Often ○

How often have you been angered because of things that were outside of your control?

Never ○ Almost Never ○ Sometimes ○ Fairly Often ○ Very Often ○

How often have you felt difficulties were piling up so high that you could not overcome them?

Never ○ Almost Never ○ Sometimes ○ Fairly Often ○ Very Often ○

Do you have intent to leave this institution?

Yes ○ No ○

What is your reason for intention to leave the institution?

- ☐ Retirement
- ☐ Career Advancement
- ☐ Lack of Administrative Support
- ☐ Lack of Support from Leadership
- ☐ Other Career Opportunities
- ☐ Other
- ☐ Choose Not to Answer

When do you intend to leave the institution?

- ○ 0-1 years
- ○ 1-2 years
- ○ 3-4 years
- ○ 5+ years
- ○ Choose Not to Answer

What is your faculty rank?

- ☐ Instructor
- ☐ Lecturer
- ☐ Clinical Assistant Professor
- ☐ Clinical Associate Professor

- [ ] Clinical Professor
- [ ] Assistant Professor
- [ ] Associate Professor
- [ ] Professor
- [ ] Professor Emeritus
- [ ] Choose Not to Answer

Which department are you employed with?

- ○ Behavioral Health
- ○ Cancer Center
- ○ Cardiology
- ○ Dental College
- ○ Emergency Services
- ○ Family Medicine
- ○ Gastroenterology
- ○ Gynecology/Obstetrics/Reproductive
- ○ Internal Medicine
- ○ Neurology/Neuroscience
- ○ Nuclear Medicine
- ○ Orthopaedics
- ○ Otolaryngology
- ○ Pain Management
- ○ Palliative Care
- ○ Pediatrics
- ○ Plastic Surgery
- ○ Pulmonology
- ○ Radiology
- ○ Rheumatology
- ○ Senior Health
- ○ Sports Medicine
- ○ Surgical Services
- ○ Transplant
- ○ Trauma
- ○ Urology
- ○ Other
- ○ Choose Not to Answer

How many years of service do you have at this Institution?

| 0-5 years | 6-10 years | 11-15 years | 16-20 years | 21 + years | Choose Not to Answer |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

How many hours per week do you work at this institution?

Work Duty (Effort Percentage)

- [ ] Research/Scholarship
- [ ] Clinical
- [ ] Teaching/Instructional
- [ ] Administration
- [ ] Other

Do you have any comments you would like to share?

Faculty Intent to Leave Academic Medicine and the Association of Stress and Age

Powered by Qualtrics

# Appendix D: z tests – Logistic regression

Table 2

z tests – Logistic regression

| | | | |
|---|---|---|---|
| **z tests –** Logistic regression | | | |
| **Options:** | Large sample z-Test, Demidenko (2007) with var corr | | |
| **Analysis:** | A priori: Compute required sample size | | |
| **Input:** | Tail(s) | = | Two |
| | Odds ratio | = | 2.3333333 |
| | Pr(Y=1\|X=1) H0 | = | 0.3 |
| | α err prob | = | 0.05 |
| | Power (1-β err prob) | = | 0.95 |
| | $R^2$ other X | = | 0 |
| | X distribution | = | Normal |
| | X parm μ | = | 0 |
| | X parm σ | = | 1 |
| **Output:** | Critical z | = | 1.9599640 |
| | Total sample size | = | 104 |