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ASSESSMENT OF STRENGTHS-BASED INTERVENTIONS ON FIRST-YEAR MEDICAL STUDENTS

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FIRST-YEAR MEDICAL STUDENTS

by

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DEDICATION

This manuscript has been written in dedication to my husband, Jermalle L. White. Thank you for your unconditional love. Your support, patience and chauffeured rides kept me encouraged, focused, and upbeat! To my children, Andrew IV, Andria, Andre, and La'Tia, and my grandchildren, you are my inspiration! To my parents, Leon and Carrie Good; mother-in-law, Linda Malone; aunts and uncles; and the memory of my grandparents, to whom a higher education dream was denied, I stand on your shoulders! To my siblings, Crystal, Lindie, Leona, Lolita, Lenon Jr., Carmalita, and Lamont; sister-in-laws, Va'Quisha and Shannon; brother-in-laws, Roland, Ventress Sr., Vincent, Will III, and Neal; my nieces, nephews, and great nieces and nephews and cousins, thank you for your support. You saw me through insurmountable odds, and I love you for that! To the Eli Lilly Journey Fellowship and my 2017 Executive Journey Pro Family, thank you for championing my success! To Junior Achievement-Chicago that provided my first undergraduate college scholarship, it made the difference. I am forever grateful. To the Zion Temple Apostolic Church family: thank you for the foundation in faith, patience and servant leadership. To former colleague, Craig Clifton; former students, Dr. T. Frimpong and Dr. D. Less; and former mentor Ms. Jackie Jimerson, rest in heaven. To mentors Dr. F. Brown, Dr. E. Jones, and Dr. D. I. Campbell, thank you for your constant belief in me! Last, but certainly not least, to all the individuals who supported my vision, provided inspiration, and shared words of encouragement and prayers, thank you! You are all precious in my life!

ABSTRACT

In the quest for a doctoral degree many candidates fail to meet their milestone

accomplishment. It is estimated that approximately 30% of individuals who pursue a

doctoral degree will not finish. Medical school has been found to be a very intensive

program to pursue for many who begin the journey. Despite its difficulty, 81.6% to

84.1% of medical students achieve the status of medical practitioner, within a three-to-

four year program. Despite the seemingly high completion rate, the achievement gap has

further implications on physician shortages. The researcher conducted a quantitative

study to determine the impact training first-year medical students using the

CliftonStrengths® assessment would have on resiliency, self-efficacy and academic

performance at a large Midwestern medical university. The participants consisted of two

groups ($n = 87$), 30 untrained participants and 57 trained participants. An independent *t*-

test was conducted and used to calculate resiliency, self-efficacy, and academic

performance on two course grades. All test data were analyzed, and the results found no

outcomes to be statistically significant. The current study is the first known to be

conducted with students in a medical school setting utilizing the *CliftonStrengths®*

assessment. Future studies utilizing a larger population of participants, particularly over a

longer period of time that incorporates the full three-year or four-year curriculum within

medical school education is encouraged.

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CHAPTER I

INTRODUCTION

Astin (1993) published more than 25 years ago extensive research related to student changes in college. A student's decision to leave or remain on campus tends to depend upon the personal relationships created by students. Astin's research provides an in depth examination about the impact developing relationships amongst peers, staff, and faculty has on an individual's decision to depart early from a higher education institution. Astin's work still has relevance today pertaining to the way learners face challenges amid the transition to college. These changes and decisions to depart encompass the undergraduate, but also affect the graduate and professional degree-seeking learner as well.

Sandars, Patel, Steele and McAreavey (2014) found that Astin's (1993) work supported the fundamental idea that relationship building supports student transitions. These transitions impacted student connectedness and overflowed to student performance in the classroom. Sandars et al. suggested medical schools create an opportunity for personal identity and professional development to merge and foster new opportunities for growth. Choi et al. (2019) supported Tinto's (2010) research and suggested student's backgrounds and social histories affected their transition to universities. Further, determined whether students would build quality relationships. The researchers determined utilizing Tinto's theory of student departure further supported student success

initiatives and opportunities to improve retention. The creation of a supportive structure both in and outside the classroom impacted student success and progression (Choi et al.). Failure to provide connections between students, staff and faculty led to disconnect for students.

The college experience creates a pressure many students believe they are prepared to undertake. As it relates to its academic rigor, the sometimes well-organized students may learn they are unprepared and those achieving at high levels may find the transition somewhat overwhelming. According to the NSC Research Center (2017), fall 2015 data, 73.4% of enrolled first-year students persisted at a United States collegiate institution. However, the following fall 2016 data reported that 61% persisted and were retained of the previous year's first-year students, at the institution they originally matriculated at the start of the term. Colleges and universities find themselves at the center of this controversy related to student success, retention, persistence and graduation (Bingham & Solverson, 2016).

The challenge of finding avenues to sustain student well-being in graduate school programs has created a greater need than universities and colleges can meet (Flaherty, 2018). Barreira (as cited in Flaherty, para 4) indicated creating counseling centers and hiring additional staff to meet the needs of students due to stress and suicidal ideation does not address the concern. Creative solutions that increase student engagement, managed self-care and programs that create a sense of purpose are essential (Flaherty).

Researchers have shown many factors affect student retention. Tinto's (1993) theory discussed the exodus of students based on lack of academic success and their connection to the campus community. According to Reason (2009), institutions that

understand the student experience prior to arriving on campus and cultivate a campus experience around appreciation of the unique characteristics and qualities each student brings to campus, are generally able to create a welcoming climate. Additionally, Reason suggests the creation of clear language on policies and procedures as well as providing an environment of engagement between student and faculty members. These processes foster an environment for student growth and a greater chance of student persistence and development. O'Keeffe (2013) identified the impact 'sense of belonging' has on the critical influence of student success. Institutions that focus on creating elements that connect students to the institution in a multitude of ways demonstrate strong success rates on student satisfaction. These aspects discussed by the aforementioned researchers contribute to student persistence and support educational facilities in reducing student attrition.

Statement of the Problem

The stressors noted above are exacerbated for medical school students who often face relocation, family and friend separation. These pressures along with adjustments to academics, and faculty expectations contribute to student attrition (O'Keeffe, 2013). According to the Association of American Medical Colleges (2014), the four-year graduation degree of medical students maintained a 90% completion rate. It was in the late 1970's when the percentage of graduates fell below 83% of graduating four-year students. The percentage of graduates fell to its lowest at 81% during 2009-2010 with the matriculating class of students. Despite these seemingly high medical degree only graduation rates, "a clear trend exists for the last 30 years identifying a clear pattern of decline in the four-year graduation rate for single degree medical students" (Caulfield,

Redden & Sondheimer, 2014, Discussion, para 9). According to the Association of American Medical Colleges, the four-year graduation rate ranged from 81.6% to 84.1% from 2010-2015. Influences such as these continue to concern higher education institutions. Based on these conditions, the researcher was inspired to understand further issues related to student behaviors, stressors and attrition in medical school. This curiosity inspired the current study on student self-efficacy and resiliency during their medical school journey.

Medical school students experience high levels of anxiety and discomfort while pursuing the path to a professional degree in medicine (Park et al., 2015). The demands of medical education are stressful and demanding and may affect students' academic performance, mental and physical health (Sharma et al., 2013). A growing level of documented literature (IsHak et al., 2013; Pagnin et al., 2013; Youssef, 2016) collected in the last 10 years show increased rates of stress, burnout, depression, and suicidal ideation in medical students. The Association of American Medical Colleges has encouraged individual medical schools to incorporate positive mental health programs to maximize student wellness and resilience and encourage help-seeking behaviors to decrease these characteristics (Van Dijk et al., 2017).

Background

Medical students' preclinical years provide the framework for a successful start to years of developmental training in the profession. A clear understanding of how to deal with increased levels of stress and discomfort while pursuing the path to a professional degree in medicine appears fundamental. Vyas, Stratton, and Soares (2017) conducted a cross-sectional study through an online survey distributed through student email. The

focus of the study-examined student's self-assessed stress in order to develop wellness related interventions.

The participant pool included 320 females and 246 males in the first four pre-clinical years across four allopathic medical schools in the southeastern United States. Vyas et al.'s (2017) research suggested students in the first two years of medical school displayed higher levels of stress due to academic and family expectations. The pressures of academic stressors seemed high for all students in the first two years, followed by residency competitiveness in the third year and financial concerns in the fourth year. This stress caused sleep deprivation, which led to problems with fatigue and burnout. Students throughout all four years experienced some level of fatigue.

Vyas et al. (2017) justified incorporation of student well-being programs that integrated wellness and student activities centered on developing self-awareness. These types of programs provided opportunities to improve student health and welfare as they progressed through the pre-clinical curriculum.

Additional research discussed the association between levels of stress and tension in medical students. Park et al. (2015) conducted a cross sectional online study through campus email to examine the relationship between stress, social support, and empathy among medical students. The participant pool included 1,675 male and 1,017 female students across 20 medical schools in South Korea.

The study included evaluations of perceived stress, social support and empathy. A *t*-test measured levels of empathy, social support and stress related to gender while Pearson's correlation associated relationship analysis between empathy, social support and stress. A multiple linear regression identified predictors of empathy.

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Research by Park et al. (2015) revealed women in the first-year of medical school displayed significant levels of stress, depression, and anxiety despite higher levels of social support than men do. This behavior appeared more prevalent in women based upon the transition to medical school, the number of exams undertaken, competitive nature, and cultural and family expectations. Park et al. concluded that both male and female medical students with no social support had higher prevalence of depression than those who received encouragement from family or friends. Lack of support seemed associated with mental health problems, which led to higher levels of depression long term.

The research of Vyas et al. (2017) parallels the evidence supported in the study by Park et al. (2015) that indicated the impact high levels of stress had on the first-year medical school experience. Park et al. suggested incorporating ways to decrease the result of stressors as part of the curriculum, through problem-based learning and programs that created resilience. Increased academic performance and self-awareness appear related to a strengths-based approach to learning (Soria, Laumer, Morrow & Marttinen, 2017). Janke et al. (2015) discovered that for professional students, increasing personal self-efficacy had positive outcomes related to patient care and graduation. The goal of strengths-based learning focuses on increasing student confidence and self-awareness.

Many tools have been created that validate resilience through learning and action. Many of these focus on the development of personal strengths and provide clarity in applying them. One such tool, the strengths theory established by Dr. Donald Clifton, former CEO of the Gallup Organization provides such framework. This is one tool, as Clifton and Anderson (2002) suggested, that assists students in developing and applying strengths in reaching levels of personal excellence. The instrument and the strengths-

based approach is an outcome of decades of research. The initial book and instrument previously developed for educational use were a collaboration between Clifton and Anderson. However, for the current study, the focus is on the instrument used for educational purposes in the collaboration between Clifton and Rath (2007).

Soria and Stubblefield (2015) conducted a qualitative study that explained the use of a strengths-based initiative on first-year students at a large research university in the Midwest. The researchers sought to understand the impact of strengths initiatives on first-year students' sense of belonging and persistence to the next year. A total of 5,122 students received the CliftonStrengths® assessment through student email during the first week of classes. Students received their top five talent themes and a theme report that explained their unique talents, upon completion. At the end of the semester, students received a follow-up email to gain an understanding of their strengths' utilization throughout the semester. The final participant pool consisted of 1,421 students. The authors measured for student satisfaction or sense of belonging and strength awareness, controlling for student interactions with strengths.

Soria and Stubblefield (2015) concluded that students with greater strength awareness appeared more likely to foster a sense of belonging on campus compared to those who had not discussed their strengths with anyone on campus. The study correlated with the findings provided by Park et al. (2015) that suggested a lack of support increased levels of depression and stress. The incorporation of a strengths-based initiative created resistance to stressors and formed a sense of belonging. Although, Soria and Stubblefield acknowledged a lack of diverse participants in the study, the results demonstrated a

statistically significant correlation of strengths resourcefulness and student satisfaction to second-year persistence and retention.

The research of Soria and Stubblefield (2015), Park et al., (2015), and Vyas et al., (2017) supported the idea of incorporating curriculum to assist first-year student transition and stress. When implemented, programs facilitated student engagement and created a sense of belonging that increased progression to completion. It is plausible that the medical school experience of future physicians may be enriched by assessing and researching strengths-based learning.

<div align="center">Research Questions</div>

The current study was a true experiment and used quantitative research to assess the relationships between a strengths-based intervention, self-efficacy, and resilience. Due to the limited research within medical schools on first-year students utilizing a strengths-based approach the following questions guided the study:

1. What difference is there in academic performance (based on academic basic science course scores) between first-year medical students who have received training and results from the CliftonStrengths® assessment and those who have not?

2. What difference is there in self-efficacy between first-year medical students who have received training and results from the CliftonStrengths® assessment and those who have not?

3. What difference is there in resiliency between first-year medical students who have received training and results from the CliftonStrengths® assessment and those who have not?

Description of Terms

The terms below provide a clearer understanding of unique definitions used in this study:

Academic Coach. An individual that guides the learning goals of individuals to reach their greatest potential through an individualized evaluation of performance through a review of objective assessments (Wolff et al., 2019).

Association of American Medical Colleges (AAMC). An association that serves and leads the academic medicine community to improve the health of all (Association of American Medical Colleges, n.d.).

Burnout. A state of mental and physical exhaustion related to work or care-giving activities (IsHak et al., 2013).

Fall Enrollment. A student counted as having been enrolled in the fall if they were enrolled for any length of time in a term that began between August 1 and October 31, inclusive (NSC Research Center, 2017).

First-year medical student. A student in the first-year of training in a medical school program (Association of American Medical Colleges, n.d.).

CliftonStrengths®. A web-based assessment of normal personality from the perspective of Positive Psychology. It is the first instrument of this type developed expressly for the Internet (CliftonStrengths®, 2019).

CliftonStrengths® Themes Descriptions. Group of similar talents. The Clifton Strengths Finder (CSF) identifies 34 unique Signature Themes and upon completion offers a rank order of your most dominant five themes (CliftonStrengths® Themes Descriptions, 2019).

Coaching. The process of supporting individuals with identifying strategies that address gaps in learning, creating goals, exploring solutions, evaluating performance and providing feedback, while allowing the individual to be accountable for their self-learning (Deorio & Hammoud 2017).

Grit. Passion and perseverance for long-term goals (Duckworth, 2016).

Passion. The force behind an action (Kunat, 2018).

Persistence. Continued enrollment (or degree completion) at any higher education institution — including one different from the institution of initial enrollment (NSC Research Center, 2017).

Resilience. An ability to manage, adapt and overcome challenges (Northouse, 2016).

Self-efficacy. An individual's belief in their abilities to perform at an expected level to maintain the necessary influence over events that impact their lives (Bandura, 2012).

Strengths based learning. An individual's ability to identify perceived relative strengths and successively, select professional development activities that further improve those strengths (Hiemstra & Van Yperen, 2015).

Zoom. A reliable cloud platform for video and audio conferencing, chat, and webinars (Zoom, n.d.).

Significance of the Study

The goal of the current study was to measure the impact of training first-year medical students on the results of a strengths-based assessment in order to understand the

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relevance relative to self-efficacy and persistence at a large medical school in the Midwest.

Several factors proved relevant to the current study. These outcomes included the possible implications the study would have on the medical community in higher education, contributions to existing theory, application of principles in the orientation of students to medical schools, and the potential for perceived changes to curriculum based on results.

The Association of American Medical Colleges (AAMC) supports a smoother transition of students in the first-year experience in medical school programs (AAMC, n.d.). The results of this study provided benefits regarding self-efficacy and resiliency related to persistence in medical school. Due to the researcher's inability to find dedicated research existing in this area, this study has potential to contribute to the body of knowledge related to medical school students. Higher education institutions may want to consider the impact of implementing strengths-based interventions within first-year programs for professional students.

The long-term benefits for health care professionals have positive implications. Students that learn how to use resiliency, self-efficacy, and strengths related behaviors and resources earlier in their professional program will have the ability to use them throughout their profession. As students matriculate through most medical school programs, they are encouraged to discuss qualities in residencies and clerkships in which they thrive. The opportunity to discuss abilities using a universal language that builds a level of comfort could afford positive benefits long-term. Additionally, advisors, career mentors and faculty could have the ability to tailor student conversations around these

innate talents and abilities and utilize them in residency applications and programs. This study may produce a useful model for the enhancement of student well-being and examine whether a strengths-based intervention program can have an impact on the self-efficacy and resilience of first-year medical students, resulting in their transition, retention and attrition.

Process to Accomplish

The researcher addressed the process for selecting the experimental and control groups, for the overall study, the creation of research questions, along with any discussion of incentives. In addition, the measurement tools and surveys used in this study with details about data collection. In order to answer the research questions, the researcher used a quantitative experiment research methodology that consisted of three separate scales provided through Qualtrics and one online survey instrument. Additionally, four open-ended questions were provided as part of the posttest.

Participants

The study was conducted at a large, public, state university in the Midwest (hereafter referred to as Midwest University) with a diverse population of approximately 1,400 medical students. The sample population included approximately 365 first-year medical students at Midwest University. The university has one main location and eight satellite locations across the state. Midwest University provided the researcher with data in order to determine the average number of admitted first-year students. The use of two criterion determined participants for the study. The first criterion required all participants to be first-time medical school students. A second criterion required all participants to attend new student orientation week. The study group was selected based on positive

responses of students who received emails and elected to participate by acknowledging their consent in the research.

Sample

First-year medical students received an approved email that was disseminated on behalf of the researcher by Midwest University sharing information about the research and the study benefits. Information included no obligation to participate and no penalty for withdrawal. The appropriate acknowledgment through informed consent provided the researcher the ability to select participants. The demographic make-up of the sample group comprised of males and females from a variety of different ethnicities, educational levels, marital status and geographic locations within the United States.

Participants received email information related to the study one week prior to arrival on campus for new student orientation. A reminder email was sent prior to the event. No incentives were provided, but participants in the experimental group received the assessment (valued at $24.99) at no charge for participation. Students that agreed to participate received information on the location for a computer room and met during an evening session of orientation week in August 2019 at Midwest University.

Upon arrival, students registered and were randomly assigned. Participants received a log in for either the control group, which received the Body-Mind-Spirit Wellness Behavior and Characteristic Inventory (Hey, Calderon & Carroll, 2006) or the experimental group, which received the CliftonStrengths® assessment. A brief overview was explained of the research study and participants were allowed to begin. The instruction sheet for the control group stated to log into the assessment and upon completion move into a different classroom where activities related to orientation week

began. The experimental group instructions stated to log into the CliftonStrengths®

(Rath, 2007) assessment and upon completion remain seated and activities related to

orientation week would begin. Both the control and experimental assessments were web-

based.

The CliftonStrengths® assessment allowed a 20-second response on each

question before the questionnaire prompted a move to the next item (Asplund, Lopez,

Hodges & Harter, 2014). The same amount of time was provided for the Body-Mind-

Spirit Wellness Behavior and Characteristic Inventory (Hey et al., 2006), the control

group assessment. Approximately, 45 minutes was allotted for completion of both online

assessments. The control group met the same criteria as the experimental group, which

included attendance in new student orientation and enrollment as a first-year student at

the university, however, received no additional training.

The researcher had the ability to access immediately the CliftonStrengths® results

for the experimental group. Participants were instructed this was the first of two trainings

and directed to download their personalized Strengths Insight Theme report. They

received descriptions of each of the 34 *CliftonStrengths*® Themes. A brief overview of

the results was discussed. Participation included one additional training during the month

of December. Additionally, academic basic science scores for research participants were

securely obtained from the institutional database in October and January. Both groups

were administered posttest survey instruments and allowed to complete between January

and March 2020. The research ended in March 2020. These tools included the Sherer

Modified General Self-Efficacy Scale (Henry, 2016), the Duckworth 8-Item Short Grit-S

Scale (Duckworth & Quinn, 2009) and four open response questions through Qualtrics.

The researcher thanked survey respondents for their dedicated time. They were provided final findings upon completion of the study. The researcher sought permission to utilize the adapted Sherer Modified General Self-Efficacy Scale from the author (Henry, 2016) (Appendix A). Participation in the surveys and assessment were voluntary and participants' identities remained anonymous with minimal risks.

Summary

The researcher sought to determine if the amount of time a first-year medical student at a Midwest university invested in receiving their strengths-based results and training on specific and identified goals influenced academic outcomes, self-efficacy and resiliency of students in the study to determine persistence to second semester.

The knowledge of student strengths could enable them to become better stewards of their personal self-care and encourage developmental relationships between students, faculty, and staff based on the knowledge obtained in the study.

The previous components of this chapter provided the background and groundwork of the problem, problem statement, and research design. Additionally, it provided history and development of the CliftonStrengths® instrument and provided terminology to help facilitate understanding of the research. As well, the researcher shared a brief literature review and the process to accomplish the study incorporating an understanding of a strengths-based intervention. A full review of the literature will be addressed in Chapter II.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The purpose of the current study was to assess the self-efficacy and resiliency of

first-year medical students at a large Midwestern University who have been trained to

understand and utilize CliftonStrengths®. Additionally, the study explored whether

academic outcomes of participants with training would be influenced. The goal of the

study was to understand whether knowledge of student strengths could enable students to

become better stewards of their personal self-care and to develop stronger relationships

with peers, faculty, and staff based on the knowledge obtained in the study. The

following sections will begin with a review of existing research on academic performance

and stress and the effect on endurance of medical students as they transition through

medical school. Next, the researcher will examine self-efficacy and resiliency and the

role it has on the effects of academic achievement and persistence. Third, the researcher

will review literature that explores CliftonStrengths® and also consider alternate forms of

strengths-based tools. Finally, the chapter will conclude by discussing the guidance

coaching and advising provide in strengths-based development of college students.

Academic Performance

In order to explore and inform research question one (What difference is there in

academic performance (based on basic science scores) between first-year medical

students who have received training and results from the CliftonStrengths® assessment and those who have not?) the researcher examined literature on the factors that influenced college students' academic performance. The researcher gave emphasis to studies pertaining to medical students particularly.

The transition to medical school may be challenging for many students. The excitement that a student experiences after acceptance does not suggest an expectation of failure. These individuals have likely achieved at the highest academic levels throughout their academic journey. According to data collected for medical schools (Association of American Medical Colleges, 2019), grade point averages for admitted non-science majors during the 2019-2020 school term averaged 3.66 while science majors averaged 3.81 on a 4.00 scale. These students have an understanding of the collegiate process as they have a plan from previous learning experiences in undergraduate and graduate programs (Holden, 2018 & Holland, 2016).

Despite preparation, Holland (2016) suggested 10% of medical students will experience some form of failure during the medical school process. The use of pass-fail grading systems has been widely adopted by medical schools to help reduce stress and completion among students (Krupat, Pelletier, & Dienstag, 2017). Medical school accreditation standards routinely measure learning environments to determine the impact on professional measures (Pololi et al., 2017). The model of traditional lecture-based curriculum, where the teacher transferred a large quantity of information from instructor to student, considered passive learning (Park, Park & Chae, 2018) has shifted to a competency based format in a flipped environment (Park et al.; Ramnanan & Pound, 2017). This competency-based format allowed students to learn outside the classroom in

a pre-class style of engagement and return to the classroom to participate with the information in small group activities (Park et al.; Ramnanan & Pound). But, this form of interaction as discussed by researchers (Park et al.; Zheng, Ward, & Stanulis, 2020) can be met with unique challenges. Adjustment to the environment of medical school, new study routines, and high demands may lead to immediate distress (McGrady, Brennan, Lynch & Whearty, 2012).

In a study of medical schools, administrators reported a high level of perceived stress in their students (Heinen, Bullinger, & Kocalevent, 2017). These levels had been correlated to the transition from undergraduate to graduate school in general. Students appeared overwhelmed due to the increased volume of learning material expected over a short time period (Lujan & DiCarlo, 2006). A student's inability to perform well academically sometimes led to an unhealthy phase of stress and academic instability (Kotter, Wagner, Bruheim, & Voltmer, 2017).

Research discussed by Lee (2017) suggested an examination of students' grit through the use of Folkman's appraisal theory. This analysis provided insight on perceived academic performance in college students. Lee explained that the student's tendency to accept failure had occurred caused more stress than the actual educational experience itself. Cleland et al. (2013) suggested creating resources that individuals were able to relate to in a meaningful way assisted with alleviating the stress associated with academic failure.

Medical school programs seek to find opportunities to support academic performance. Some programs suggested further training that fostered academic resilience and growth (Yeager & Dweck, 2012). Programs that used forms of self-regulated

learning theory to understand students' self-learning found the use of this technique

successful (Zheng et al., 2020). Researchers (Artino, Hemmer & Durning, 2011)

suggested that highly self-regulated learners possessed qualities that controlled learning

outcomes in many ways. These learners held strong beliefs and were capable of

motivating themselves and maintained adaptability in time of stress. They managed to

overcome boredom by reorganizing and remanufacturing tasks and learned to process

thinking in a different way. They often sought support when they were unable to find

solutions in difficult learning situations.

Researchers (Artino et al., 2014; Zheng et al., 2020) suggested students could not

be expected to enter the medical school profession with these competencies. Zheng et al.

suggested despite undergraduate success in studies, more specific instruction on how to

study is warranted in medical school. Researchers advocated to incorporate methods that

included an individual's self-motivation toward learning perception comprised of their

values, self-efficacy, and individual study strategies (Artino et al.; Wolters & Hussain,

2015) was essential.

Learning environment

Medical schools share a responsibility to prepare and graduate knowledgeable

professionals (Dyrbye, Thomas & Shannafelt, 2005). The AAMC supports the belief that

the learning environment leads to an ideal medical education and reflects the potential

quality of patient care long-term (Pololi et al., 2017). Dunham et al. (2017) suggested the

learning environment proved instrumental in the progression of developmental skills and

adaptation to the medical environment. Lack of perceived support had notable changes to

academic performance and stressors from the "pre-clinical to clinical years" (p. 387). The

supportive culture increased the possibility of student compassion, professional behaviors and successful academic progression (Dunham et al.; Shochet, Colbert-Getz, & Wright, 2015). Failure to provide such resources and a welcoming climate resulted in some cases to stress and burnout, depression and increased anxiety.

Tinto's theory (as cited in Holden, 2018) suggested that collegiate integration did not merely depend upon academic integration, but also upon activities that incorporated the student's progression through the collegiate process. These activities included social aspects related to student engagement with faculty, staff and peers (Thompson, Mcbride, Hosford, & Halaas, 2016). As well as, personal connections with family, friends and the collegiate environment.

Another challenge faced by medical students was relocation from families and friends. This experience presented difficulties with transition. For many, leaving an undergraduate program, shifting environments and building new support systems was overwhelming (Heinen et al., 2017). Researchers (Dyrbye et al., 2005; Martinez & Tuesca, 2019) suggested that students facing new activities such as human cadaver dissection in the first year might experience an increase in the level of stress. Combine these new and challenging experiences with the abundance of an academic workload (Dunham et al., 2017) and pressure to obtain passing exam scores of the National Board of Medical Examiners (NBME), over multiple-choice subject exams at the end of each course (Artino et al., 2014) and the potential for stress increased greatly. The volume of information required for comprehension within the first few weeks added another layer of complexity.

According to researchers (Dunham et al., 2017), the overwhelming combination of responsibilities and adjustments can cause an increase in the additional amount of anxiety a student might experience. This led to a belief that time does not exist for leisure activities or wellbeing (Dunham et al.). In turn, the student's perception of the learning environment influenced greatly the positive or negative impact of the learning experience. Consequently, this shaped the effect on students' physical, psychological and social influences (Shochet et al., 2015).

Learning styles

Researchers (Samarakoon, Fernando, Rodrigo & Rajapakse, 2013), suggested an individual's ability to learn large volumes of information may be heavily due to their preferred style of learning. Based on past academic performance, students learned to adapt learning styles to give them a better chance for success. These modalities are commonly known as VARK, an acronym used to describe visual, auditory, reading/writing and kinesthetic. These processes are used by individuals to support their style of learning.

VARK is generally informed by a questionnaire created by Fleming (Prithishkumar & Michael, 2014) at Lincoln University and has been used as a resource for students to understand individual learning styles. In the first year of medicine, VARK as a resource proved influential in determining preferred styles of learning with medical students and provided a refresher to students returning to the classroom environment. Prithishkumar and Michael suggested that an instructor's ability to create material in the classroom that was both stimulating and thought provoking was important to encourage classroom interaction.

Researchers found first-year medical students who used a unimodal style of learning, or one preferred style of learning, especially those academically struggling, who switched to a bi-modal, tri-modal or quad modal style of learning, meaning they incorporated multiple strategies to understand material, were shown to have a statistically significant difference in test scores (Hu, Gao, Wofford & Violato, 2018; Kharb, Samanta, Jindal, & Singh, 2013). The use of the VARK as a tool proved beneficial in learning style preferences and engaged students with instructional material (Dyrbye et al., 2005; Hu et al., 2018).

Medical schools are tasked with providing graduates with a quality program that incorporates curriculum detailed with didactic components, lectures, supervised practice and hands-on opportunities to engage learning (Dyrbye et al., 2005). In a study conducted by researchers (Samarakoon et al., 2013), VARK was administered to the participants. The results suggested strategies toward a variety of new approaches to teaching. These approaches addressed the learning modalities of students and encouraged building coursework to address the needs of various approaches to learning style. Research has demonstrated that students lessened the amount of time for personal well-being to replace it with space for academics. The course required focused attention to detail and provided study time that resulted into student success (Barbosa, Silva, Ferreira & Severo, 2018).

Anxiety and stress

Research studies have repeatedly shown that medical school can be a period of high stress and deteriorate mental health for many students (Dyrbye et al., 2005; Gengoux & Roberts, 2019; Saravanan & Wilks, 2014; Sharma et al., 2013). Stress has been found to correlate to depression, anxiety, poor quality of life and early death

(Sharma et al.). Saravanan and Wilks reported medical students displayed higher levels of depression and anxiety than their peers of the same age and general population. When taken as a whole, the rise in depression and anxiety among college students and the frequency of psychiatric disorders had risen over the last decade (Faramarzi & Khafri, 2017).

A failure to address challenges related to quality of life issues may affect academic progress and have long-term negative consequences. Sharma et al. (2013) described stress as the pattern of response an individual makes to specific and non-specific events that either disturb or exceed their ability to cope. The research reported by Sharma et al. implied medical students with no social support had a higher prevalence of depression than those who received encouragement from family or friends. Lack of support appeared associated with mental health problems, which led to higher levels of depression. These stressors did not end in medical education, but persisted as practicing physicians.

Gengoux and Roberts (2019) suggested that getting a jump start on potential stressors, effectively teaching coping mechanisms in medical school, could have a lasting positive impact. Chang, Eddins-Folensbee, and Coverdale (2012) recommended that counseling services and extramural activities were important. Thompson et al. (2016) suggested that students had a stigma associated with seeking mental health resources. The lack of knowledge around the utilization of mental health professionals further perpetuated depression and burnout students sustained. Failure to connect students with these avenues resulted in academic difficulty, which led to failure to succeed or attrition. Attrition, as suggested by researchers (Brunsden, Davies, Shevlin & Bracken, 2000) can

be sub-divided into two categories, voluntary and involuntary. Voluntary students have left school on their own volition; whereas, involuntary attrition refers to students who have "failed and leave the university because they did not satisfactorily reach the standards required as success" (Brunsden et al., p. 304).

Researchers agreed programs that created self-care and supported resiliency should be promoted and supported. Kong et al. (2013) suggested mentorship from peers facilitated learning and built community. The incorporation of components that encompassed wellness initiatives were also important. Elements that educated students on the risk of burnout and supported at-risk students (Novick et al., 2016) provided opportunities to build relationships among peers outside the classroom (Ramnanan & Pound, 2017). Additionally, these elements provided the ability to reimagine and foster creativity in learning. As well, fostered a welcoming environment that produced healthier, informed and resilient students (Pathipati & Cassel, 2018).

Depression and burnout

Researchers (Chang et al., 2012) agreed that first-year through third-year student stressors and the associated burnout medical students experience are statistically high when compared to other groups of college students. Dyrbye et al. (2008) conducted a study and found more than 50% percent of medical students faced burnout during their educational journey. IsHak et al. (2013) suggested an association between mental and physical exhaustion and a relationship to chronic stress. Pagnin et al. (2013) conducted a study that suggested burnout was a stress induced syndrome faced by medical students. Burnout created fatigue that effected individuals emotionally and lowered personal satisfaction. Youssef (2016) and Dyrbye et al. suggested that burnout had been known to

trigger substance abuse and suicidal ideation. Further, researchers (Mazurkiewicz, Korenstein, Fallar, & Ripp, 2012) found in third year medical students, a pattern of mental and emotional behaviors that had connections back to medical school.

Dyrbye et al. (2008) found predictors of burnout included an inability to manage and balance the academic rigor with work and life. A failure to incorporate healthy eating and a balanced diet along with lack of exercise contributed to burnout. Individuals who lacked the ability to acquire new knowledge despite working long hours to learn the material were heavily impacted. Pagnin et al. (2013) suggested that selecting career choices based on an emotional connection related to family members caused greater exhaustion. The decision to choose medicine due to the loss of a close family member also had been shown to have a statistically significant impact on stress that resulted in burnout.

A condition known as alexithymia has been linked to health effects of medical students. Alexithymia has been described as "an inability to understand, process or describe feelings" and also affects college students' academic progress (Faramarzi & Khafri, 2017). Alexithymia has shown a positive correlation with test anxiety in students (Sepahvand et al., 2015) and has a strong correlation of decreased self-efficacy among college students (Faramarzi & Khafri). Dyrbye et al. (2008) suggested that despite support provided by the AAMC, medical students required more support services. Dyrbye et al. (2005) advocated for the combination of mental health services and a student wellness component in order to create an environment that nurtured help seeking behaviors and equip students with knowledge to recognize and cope with stressors.

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Student Wellness

Researchers (Chang & Myers, 2003; Myers, Clarke, Brown & Champion, 2013) suggested wellness as the key to overcoming barriers related to poor health. Bart et al. (2018) discussed the World Health Origination (WHO) established guidelines in 2004 that incorporated the establishment of principles central to optimum health care prevention. These were categorized within two categories that included physical, psychological, social, spiritual and economical. The second category focused on the person's role as it related to faith-based organizations, family, friends, and the community and work environment, along with other settings (Bart et al.).

The promotion of wellness based attitudes and behaviors was necessary in assisting students with overcoming barriers in medical school (Trilk, Muscato, & Polak, 2016). Dr. Halbert Dunn, who is credited as the *architect* of the modern wellness movement (Chang & Myers, 2003) defined wellness as "an integrated method of functioning oriented toward maximizing the potential ability of the individual" (Dunn, 1961, p. 4). An effective instrument to measure wellness was found to be effective that went beyond health and disease prevention, but incorporated wellness interventions (Bart et al., 2018). Teaching individuals to engage in multi areas of well-being that incorporated the mind and body medicine were key concepts in achieving wellness outcomes (Gordon, 2014).

Dyrbye et al. (2005) suggested the need to equip students with skills and behaviors to recognize stress and seek assistance. Developing strategies that promoted help-seeking behaviors were essential elements in personal self-care and building blocks for securing a healthy disposition when faced with a defeatist attitude.

Kong et al. (2013) suggested the ability of family members to provide emotional support was critical to sustained student success. Students who experienced support seemed to display high levels of satisfaction and had lower levels of perceived stress. Park et al. (2012) found that students who perceived social support as one of the coping mechanisms showed greater satisfaction in medical school. The opposite held true for students who lacked support; they experienced poor academic success and low self-perception.

Research has demonstrated that academic performance in the first year of medical school is influenced by many factors including, learning environment, learning styles and well-being. These areas supported student development as a component of achievement. Programs that support these elements provided first-year medical students with a quality foundation.

<div align="center">Self-Efficacy</div>

In order to explore and inform research question two, (What difference is there in self-efficacy between first-year medical students who have received training and results from the CliftonStrengths® assessment and those who have not?), the researcher examined literature on the factors that influenced college students' self-efficacy. The researcher gave emphasis to studies pertaining to medical students particularly.

Self-efficacy is more than a realized ability to achieve academic success. It is an individual's belief to perform and learn at expected levels of competences (Bandura, 2012; Klassen & Klassen, 2018). In a study conducted by Klassen and Klassen the role of self-efficacy in the motivational implications that promoted medical student growth throughout the course of medical school education was examined. Self-efficacy was

described as a process of "learning efficacy" or learned behaviors that were effective when coupled with "self-regulated efficacy" or self-controlled impulses and negative actions (Bandura, p. 25).

Self-efficacy promoted behaviors associated with social and motivational qualities, but recognized emotions and feelings influenced behaviors and cognitive skills that enabled an ability to complete tasks effectively (Middleton, Tran, Lo and Craig, 2016). Cognitive skills influenced how individuals comprehended, processed, remembered and applied those skills to an applicable outcome (Bandura, 2012). Individuals that perceived an outcome that appeared unfavorable, failed to act and withdrew from activity. These individuals, Bandura suggested, displayed low self-esteem that caused them to avoid actions when faced with adversity. Bandura suggested that an individual's lack of knowledge was not the issue. It was minor influences based on the perceived actions that created a sense of distress that resulted in a belief that effected credibility.

Low self-efficacy showed students suffered from depression and burnout (Turan, Valcke, Aper, Koole, & Derese, 2013) because they perceived things to be more difficult. Students with high self-efficacy had the ability to self-regulate behaviors. They were aware of their learning and abilities and adapt behaviors to achieve goals in stressful situations (Artino et al., 2011). These individuals had lower levels of procrastination, were able to manage time effectively, and had a detailed oriented quality. They set high goals and showed more persistence when faced with difficulty (Schwarzer & Warner, 2013).

Research has shown the importance of self-efficacy on the prediction of medical student success (Guntern, Korpershoek, & Van Der Werf, 2017; Turan et al., 2013). Self-efficacy is a factor important in student success and facilitated learning and development of medical students (Klassen & Klassen, 2018). Holden (2018) and Faramarzi and Khafri (2017) suggested that self-efficacy was based on the potential to manage situations to achieve a desired performance based on an execution of actions. According to Guntern et al. increased self-efficacy in medical students played a vital role as a physician. It supported social behaviors such as empathy associated with patient interactions when stressful situations were perceived (Guntern et al.).

Many unsuspecting students, despite the transition from undergraduate education to medical school education know their learning styles. They are not aware of the amount of study time required for medical school education (Barbosa et al., 2018). But, the promotion of self-learning motivated skills that promoted self-efficacy.

Research conducted by Turan et al., (2013), suggested medical schools that incorporated self-efficacy based beliefs to promote academic achievement assisted students in the likelihood of dropping out. Programs that supported self-efficacy beliefs and incorporated student wellness contributed toward student performance ability (Stegers-Jager, Chen-Schotanus, & Themmen, 2012). A foundational set of skills that contributed to academic achievement, social well-being and practiced daily sustained a balanced and engaged successful medical school experience (Barbosa et al., 2018).

Soysa and Wilcomb (2015) conducted a qualitative study on mindfulness, self-compassion, self-efficacy and gender as predictors of depression, anxiety, stress and well-being. The study focused on how individuals faced difficulties and failures, their ability

to complete tasks, and the effects of mindfulness in predicting outcomes. Measures used included the Five Facet Mindfulness Questionnaire, Self-Compassion Scale and Sherer Modified Version General Self-Efficacy Scale, Depression, Anxiety and Stress Scale, and the Well-Being Scale.

The study conducted by researchers (Soysa & Wilcomb, 2015) showed non-judging to be the strongest predictor of stress, followed by awareness, and then mindfulness when self-compassion, self-efficacy and gender were examined together. Brown and Applegate (2012) suggested the use of an eight point wellness model that included a component of financial responsibility. Their study of more than 2,000 college participants explored factors such as spirituality, physical health, risk prevention and relationships. Brown and Applegate identified self-awareness and self-regard, responsibility and sustainability along with healthcare management as emerging categories. Placing a focus on each of these components as a holistic model of student success can further the development and support of wellness curriculum and behavior change and outcomes.

Lane and Schutts (2014) conducted a quantitative study using the CliftonStrengths® to examine the self-efficacy belief and its relationship to hope, well-being and meaning in life among college students. The study concluded that experiences influenced overall persistence. An increased belief in personal talents correlated to greater levels of hope and life fulfilment.

Research has demonstrated an individual's ability to change and learn in medical education may cause stress to learners, because it required a level of ability to balance a variety of procedural and specialized skills simultaneously (Lujan & DiCarlo, 2006). A

curriculum design that supported self-efficacy efforts had an impact on perceived behaviors (Turan et al., 2013). Park et al. (2012) proposed incorporating problem-based learning and integrating programs that created resilience as a way to help medical students mitigate stress. Critical thinking, self-confidence, personal strengths and moral reasoning along with professional behavior were skills necessary to inspire the continued development of professional identity (Comer, Schweiger & Shelton, 2019; Kalet et al., 2017).

<div align="center">Resiliency</div>

In order to explore and inform research question three, (What difference is there in resiliency between first-year medical students who have received training and results from the CliftonStrengths® assessment and those who have not?) the researcher examined literature on the factors that influenced college students' resiliency. The researcher gave emphasis to studies pertaining to medical students particularly.

Hammond (2017) suggested an individual's passion and ability to persevere toward long-term goal attainment possessed grit. Grit is more than a measure of academic achievement, but coupled with effort, talent and stamina produced determination that resulted in increased fortitude toward independent goal achievement. Duckworth and Quinn (2009) conducted research to validate the development of the Short Grit Scale (Grit-S) on two factors; perseverance and passion toward long-term objectives. The short version, also known as the Grit-S scale consisted of eight Likert item questions. They compared their research against the Original Scale, or the Grit-O scale comprised of 12 Likert item questions. The research showed the eight-item Grit-S scale to be a more

effective measure of grit. It was both shorter and psychometrically stronger than the 12-item Grit-O (Duckworth & Quinn).

Research provided by Lee (2017) in an examination of students' grit utilized the Folkman's appraisal theory. The analysis provided awareness of college students' perceived performance and their propensity for stress. Despite student struggles, researchers (Hodge, Wright & Bennett, 2018) showed that grit with engagement had a positive effect on performance and increased a greater involvement with the university. The research conducted by Hodge et al. suggested the creation of resources individuals were able to relate to in a meaningful way assisted with alleviated stress associated to academic failure. Yeager and Dweck (2012) suggested incorporating programs and training that fostered and further developed academic resilience and growth.

In a study, (Duckworth, Peterson, Matthews & Kelly, 2007), the concept of grit was introduced and identified that passion and perseverance were predictors of achievement in challenging areas above talent alone. Individuals that believed intelligence was permanent displayed a defeatist outlook and used less effort to be successful (Lee, 2017). While those that persevered in the mindset of difficulty and hardship were defined by Angela Duckworth as possessing "grit" (Hochanadel & Finamore, 2015, p. 48).

Researchers conducted a study at a medical school in North Dakota and found that students who used "approach-oriented coping strategies" rather than "avoidance-oriented" strategies of coping appeared less likely to burnout (Thompson et al., 2016, p. 180). An inability to cope was shown to cause depression and those who possessed those qualities sought medical support less due to the stigma associated with mental health

services. Thompson et al. suggested the use of a theory that developed plans around behavior or theory of planned behavior. Their research identified medical students lacked the ability to cope and address it. But, found medical schools that created a culture that recognized the stress of the medical school environment and fostered student approachability created a learning atmosphere that encouraged well-being and supportive behavior.

<center>Strengths-Based Learning</center>

In order to explore and inform research question three, the researcher examined the history and use of strengths-based learning and methodologies. The review was primarily focused on the instrument used in the current study, CliftonStrengths® for students. The researcher examined literature on the factors that influenced college students' academic performance with preference to studies. Due to limited studies of CliftonStrengths® studies focused on medical student populations, the research focused primarily on undergraduate students and professional student populations in pharmacy.

History of strengths

The idea of strengths-based assessments provided individuals with the key to their personal transformation. It is a philosophical process that suggested change is internal to the individual and through unique qualities and abilities obstacles can be removed (Mead & Kuykendall, 2016).

Strengths-based approaches derived from the work of practitioners in social work and psychology. The meaning of strengths-based approaches had not been defined or articulated in earlier years (Fenton, Walsh, Wong & Cumming, 2015) in a way that individuals appreciated and understood its goals. According to Fenton et al. the concept

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of strengths-based processes gave rise in the early 1960s and 1970s during the period surrounding the civil rights movement as a response to the culture of over diagnosed clinical treatments (Fenton et al.). During this period in time, an increased interest rose in practice among the positive psychologist movement and their interest in the strengths-based approach (Fenton et al.). Health professionals worked with complex problems surrounding individuals and families. They became interested in how they could develop training to help families become more resourceful. A strength approach allowed for a holistic view of individuals and families and their exchange within the community. Mead and Kuykendall (2016) suggested strengths does not suggest weakness was not a factor, but rather worked to build on strengths to overcome shortfalls. The resourcefulness of individuals had an impact on their own actions which led to an appreciation of personal abilities (Fenton et al.).

CliftonStrengths®

Edward "Chip" Anderson served as a higher education administrator and former professor of educational leadership in the Doctoral Higher Education program at Azusa Pacifica University from 1999-2005. Prior to that time, he served in the Graduate School of Education for 28 years at the University of California-Los Angeles. Anderson (2005), approached learning much differently in the first 15 years of his career. He noticed early in his career that low achieving students did not achieve at the same level of success as high achieving students. His assumption was that students lacked academic preparation, background and self-management. Thus, he went about creating assessments to learn in what areas students lacked awareness (Anderson).

In 1978, Anderson (2005) attended the American College Testing (ACT) conference that was coordinated by Lee Noel and Randy Levitz, founders of what became known as Noel-Levitz, Inc., now Ruffalo Noel-Levitz, the largest consulting firm focused on student retention and recruitment (Anderson). He learned about student deficit models and began to understand the research behind why students dropped out of college. He gained information at that conference that a deficit model approach was a possible hindrance to students. At the conference, Anderson met Donald Clifton, who formerly served as professor at Nebraska University and later went on to become the Chairman of the Gallup organization. Anderson heard Clifton say, "to produce excellence you must study excellence" (p. 183). Anderson left that conference with a new framework on how to engage and assess students.

Anderson's (2005) focus changed and centered on students who were successful. He wanted to better understand their learning approach for success. It was during that time Clifton learned that low achieving students set high goals. But, high achieving students set goals slightly higher than the goals they could achieve. The focus to understand the differences moved Clifton into a path for understanding talent. Clifton and Gallup had conducted studies around talent with employees for years. George Gallup founded Gallup, Inc. in the mid 1930's offering analytics and management consulting to organizations globally. It was in the early 1980's the company incorporated changes that would include the addition of educational consulting which included the now CliftonStrengths®, along with other business and management resources produced by the Gallup organization. It was Clifton's vision more than 50 years ago that resulted in the development of the strength-based instrument used today. The Clifton StrengthsFinder®

rebranded CliftonStrengths® utilizes a framework that provides individualized feedback using a person's "naturally occurring talent, combined with their unique skills and abilities, supported with personal development to create opportunities that strengthen consistently personal areas to near perfect performance" (Asplund et al., 2014, p. 4). This particular framework supports focusing on individual strength development, rather than managing weakness. CliftonStrengths® has generated momentum within the positive psychology field and continues to foster increased engagement and strengths development under the educational umbrella of Gallup, Inc.

Substantial research exists using a number of strengths-based assessments. Louis (2011) suggested that some require the use of a paid assessment system, much like CliftonStrengths®. Others simply required the use of an online portal that provided readily accessible feedback. Regardless of the assessment, the overarching idea centers on the development of strengths and enables participants to build a foundation for leadership development. Bowers and Lopez (2010) conducted a qualitative study to investigate how students capitalized on the use of strengths. The researchers perceived students who maximized their potential when using the qualities related to their talents built self-confidence.

Janke et al. (2015) discussed a concept that utilized strengths to determine consistency amongst five public pharmacy schools' Signature Theme profiles. CliftonStrengths® uses a system that pairs 177 points to determine primary talents known as Signature Themes. It is web-based and uses 34 categories known as talent themes. (Louis, 2011). These themes divided into four domains (Strategic Thinking, Executing, Relationship Building and Influencing) illustrate individually how themes work

collectively to support goal attainment (Asplund et al., 2014). These areas provide insight around patterns of thought, feeling and behavior associated with success. Hiemstra and Van Yperen (2015) in a study conducted with undergraduates, found that both randomized experiments shared strengths-based, self-regulated learning had a positive effect in perceived competence and motivation.

Soria and Stubblefield (2015) conducted a quantitative study on all incoming first-year students at a large research university in the Midwest. The purpose was to learn the impact of strengths initiatives on first-year students' sense of belonging. The study concluded students with greater strength awareness more likely agreed with a sense of belonging on campus compared to those who had not discussed their strengths with anyone on campus. The results positively suggested that the association correlates to second year retention.

Douglass and Duffy (2015) conducted a quantitative research study to determine the correlation between the use of strengths and happiness and well-being resulting in life satisfaction. Douglass and Duffy hypothesized that self-esteem would mediate strengths use in life satisfaction. The results indicated a strong correlation between strengths use and elevated levels of life satisfaction. As well, self-esteem partially mediated a relationship between strengths use and life satisfaction.

Bloom (2018) conducted a quantitative study to determine if a distinctive pattern exists between students in Doctor of Pharmacy (PharmD) programs versus other health care professional students. Participants included Master of Physician Assistant (PA), Doctor of Physical Therapy (DPT), and Doctor of Osteopathic (DO) Medicine programs at Campbell University. The author focused on frequency of individual themes and

leadership domains using CliftonStrengths®. Four majors of college student participants completed the online CliftonStrengths® assessment as a mandatory part of new student orientation. DO medical students invited to take the assessment were offered an inter-professional workshop as a courtesy. Learner, Responsibility, Achiever, Relator and Harmony ranked in the top five themes. Learner and Responsibility ranked highest across all programs. Numerous similarities aligned with each specialty among students across the four domains. Students aligned within the top five of the most common themes within each program major.

Strengths Coaching and Advising

Researchers conducted a study using a quantitative, quasi-experimental procedure to investigate the impact made by incorporating strengths-based practice into student advising. Soria et al. (2017) piloted a study using first-year students at the University of Minnesota. The researchers discussed the benefits of using CliftonStrengths® a strengths-based assessment to assess advising. Researchers concluded that academic advisors provided a mentoring opportunity as professionals in higher education (Bettinger & Baker, 2014). Student success can be achieved through the guidance offered by an academic advisor.

Researchers found through a study conducted that provided student perception of advising practices in the relationship to student success and observed that students found six factors to be of impact. These included advisor accountability, advisor empowerment, student responsibility, student self-efficacy, student study skills, and perceived support (Young-Jones, Burt, Dixon, & Hawthorne, 2013). Frequent discussion in higher education surround student persistence in the freshmen year, but optimizing the value

added through academic advising may be a missed component. Thus, utilizing academic advisors to assist with support in the first-year provide a great foundation for student achievement (Young-Jones et al.).

Institutions of higher education are tasked with the creation of inclusive and engaging collegiate experiences (Diaz, Navarro & Chen, 2020). This may include peer coaching (Cheng et al., 2017) and a diverse learning environment (Hopper & Kaiser, 2018) embedded from the first-year through graduation. Innovative methods to assist with student perseverance through college provided opportunities that empowered students to succeed. Soria et al. (2017) conducted a study which utilized a strengths-based approach that incorporated academic advising. Soria et al. focused the undergraduate study on four principles that included the effects of strengths-based advising on first-year student engagement, academic self-efficacy and retention and the relationship to four-year graduation.

Participants in the study conducted by Soria et al. (2017) were assigned to one of two groups: a control group or a treatment group. The control group of 1150 students did not meet with an advisor throughout the school year. The treatment group of 78 students met with an advisor during the same term. The researchers used a qualitative approach by incorporating the use of a focus group. This group consisted of 21 campus advisors from two departments within the University. Each focus group transcript reviewed and transcribed using key codes, themes and areas of interests. Themes sorted, reviewed and defined provided the development of quotes to authenticate findings and provide meaning to participant experiences.

Soria et al. (2017) suggested first-year students who experienced some form of strengths-based conversation with an advisor had a notably higher rate of first-year retention and graduation in four years. These students strongly agreed the use of strengths-based advising assisted them with solidifying and persisting in the selected college major. Students exhibited greater confidence and self-awareness. Advisors found the approach beneficial as well for themselves. Advisors who used the approach increased their level of engagement with students and increased relationship building. Overall, the benefits of utilizing a strengths-based approach in an academic advising field appeared noteworthy.

Janke et al. (2015) cautioned against assumptions connected with using profiles to associate with career advancement. Researchers (Janke et al.; Yee et al., 2018) suggested that colleges could gather from the reports the ability to create a curriculum to guide learning. Additionally, they recommended that schools further utilize top five themes in overall student development, engagement and communication to create training opportunities.

Yee et al. (2018) conducted a study with professional pharmacy students that suggested individuals who identified, understood and utilized their natural talents became involved in activities throughout their collegiate environment. Their research showed that students with greater confidence and self-awareness increased levels of engagement and relationship building. Additionally, students increased personal self-efficacy and had positive outcomes related to team camaraderie, patient care and graduation. The use of a strengths-based approach, coupled with personal development and training provided long-term positive benefits.

Alternative strengths-based instruments

Strengths-based approaches are not all perceived to be equitable. There are researchers that are critical of a strengths-based approach (Clabaugh, 2005; Fenton et al., 2015) that disagree a focused attention on strengths was advantageous. These scholars doubt its legitimacy and believe it left individuals vulnerable to a lack of focus on weaknesses (Fenton et al.) and motivation where motivation had been known to be the weakness (Clabaugh). Additionally, researchers suggested the application of strengths-based initiatives was not consistent and applicable to every situation and individual (Fenton et al.).

Appreciative Inquiry

Sandars and Murdoch-Eaton (2017) suggested that appreciative inquiry (AI) is an alternate method to strengths-based approaches to learning. AI is an approach that tries to formulate and determine what works best versus a negative approach or considering what does not work. The AI mindset begins with inquiry. It is a non-judgmental approach and allows individuals to freely think about what works best for them. Sandars and Murdoch-Eaton contended that AI is an approach that is easily adaptable in problem based and experiential learning. It is a process that can be used in a group setting as well as on an individual basis. AI creates vision and purpose and allows for individuals to develop and strategize beyond what was a simple response. It allows for users to incorporate their strengths into practice. Sandars and Murdoch-Eaton suggested that when the technique was used appropriately, it provided individual and organizational change.

Values in Action (VIA)

The Values in Action (VIA) survey is a core component of the VIA institute (Han, 2019). It was originally created as a psychological assessment by a team of researchers and psychologists at the VIA Institute. In early 2000, the VIA survey was created to assess the widely used and accessible tool that measures character strengths in a variety of ways (Niemiec, 2013). It assists participants with insight related to self-discovery in areas of life satisfaction, goal setting and engagement. The assessment utilizes 24 items known as strengths that are linked to values and personal outcomes based on individual analysis. Park and Peterson (2009) discovered in their research that individuals noticed changes in personal satisfaction, social well-being, and strength development using the VIA survey. Cultivating a sense of purpose assists in the development of what matters most in personal growth.

Allan and Duffy (2014) conducted a quantitative study to investigate the correlation between the use of a strengths-based application, the presence of a personally meaningful career, and an individual calling of what they valued in life. Students received the Calling and Vocation Questionnaire that provided insight related to presence of calling or career. The VIA survey measured signature strengths. Strengths level provided insight on values and actions of signature strengths in daily life. The Life Satisfaction with Life Scale measured participant's life satisfaction and the Academic Satisfaction Scale measured participant's current academic lives. The results showed that signature strengths alone did not play a role in their chosen career journey, despite levels of calling or career path they could benefit from using their strengths.

Proyer, Gander, Wellenzohn, and Ruch (2015) conducted a quantitative study using the VIA to determine whether working on character strengths, regardless of their rank order, provided any significance in happiness. These assessments included happiness, frequency of depression in the past week, conditions in different life domains, VIA survey and how well the participants liked the interventions.

After conducting the study, the findings showed the use of signature strengths increased happiness over longer periods. Character strengths had an impact of the effectiveness on the intervention. Participants with low strengths that moderated using signature strengths could focus on tasks even with distractions. This research could prove beneficial in identifying the significance of focusing research on signature strengths versus lesser strength interventions due to the long-term effects that each could provide.

Lavy and Littman-Ovadia (2017) conducted a cross-sectional quantitative study on the association between the use of strengths at work on productivity, behavior and job satisfaction. Participants for the study were recruited over a three-month period through the VIA-Institute on Character website. Respondents were invited to participate in a study on character strengths at work. Participants received a consent for the study that included an online questionnaire with demographics, measures of strengths use, positive and negative affect, job satisfaction, engagement, work productivity and citizenship behavior (Lavy & Littman-Ovadia). The results suggested the use of strengths at work triggered a sequence of desirable outcomes, which in turn fostered positive emotions and better work engagement (Lavy & Littman-Ovadia). The use of strengths at work was an important precursor to workplace behavior and attitudes.

Coaching and Advising

Boyatzis and Jack (2018) conducted a study that examined the relationship between neuroscience and coaching in medicine. The study concluded coaching that engaged the *positive emotional attractor* (PEA) allowed an individual to visualize and aspire, which elicited a sense of hopefulness and excitement. The release of neurotoxins activated areas within the brain that triggered optimistic and positive emotions (p. 11). The process of "coaching to compliance" (p.13) or as a requirement triggered a *negative emotional attractor* (NEA). This approach in turn limited positive thought processes and sent a message that a weakness existed and required improvement. This approach created a sense of fear and annoyance on the individual receiving the coaching. Boyatzis and Jack suggested through the use of the intentional change theory (ICT) allowing individuals to lead the discussion related to their life provided opportunities for positive growth and development. Opportunities that infused coaching allowed for deeper level thinking and reflection.

Strength-based coaching suggested a fundamental set of principles that included a methodology with distinct characteristics (Grant, Green & Rynsaardt, 2010; McKenna & Davis, 2009). MacKie (2014) suggested components that provide a partnership between academic coach and the individual receiving the coaching. Interactions that brought conscious awareness to the learner and provided clear goals and objectives were an essential part of the relationship building process.

Conclusion

Chapter II included research and studies that focused on academic performance and stress and the role it plays in the endurance of first-year medical students and their

transition into medical school. The role of self-efficacy and resiliency and the effects it has on academic achievement and persistence were also examined.

Summary

A review of the literature that supported and critiqued views related to a strengths-based focus was discussed along with the validity of the instrument. Included were the impact coaching and advising had on the development of undergraduate, professional and medical school student success. As well, the influence using strengths-based assessments that included Clifton StrengthsFinder 2.0® rebranded CliftonStrengths® had on undergraduate and professional student achievement. As the study has shown, the research in this area is warranted. The use of the CliftonStrengths® assessment has been shown to be a widely used tool. But, as the evidence has shown, it lacks research in the area of medical student's education where empirical evidence could prove beneficial.

CHAPTER III

METHODOLOGY

Introduction

The literature review provided an overview of various theories and perspectives related to medical students. These areas included mental health and wellbeing, stress and burnout, resiliency and self-efficacy and strengths-based opportunities for success that can influence student performance. The literature provided an exploration of topics that revealed the need for scholarly research related to first-year support in the areas of student wellness, self-efficacy and resiliency, learning styles and strengths-based approaches.

In Chapter III, the researcher provides an overview of the chosen research design to answer the research questions related to whether the assessment and training using the CliftonStrengths® assessment improved the resiliency, self-efficacy and academic outcomes in basic science courses of first-year medical students in the fall semester. The demographic population was described and the statistical methods used were presented along with the data analysis conducted. The chapter begins with a discussion of the research questions and design followed by the instrumentation section. In addition, limitations that may have influenced the study results are discussed at the conclusion of the chapter.

Research Design

In order to examine the three research questions, the researcher chose a quantitative, experiment research approach. A quantitative approach is useful for measuring relationships and making predictions (Leedy & Ormrod, 2016). The study was a quantitative experiment (Leedy & Ormrod) that used a random assignment with posttest. Salkind (2017) suggested that using this form of sampling allows the best opportunity to avoid bias in selection. The secure Gallup Organization web portal provided the collection of data for the CliftonStrengths® assessment. The research explored relationships between a strengths-based intervention on academic performance, self-efficacy and resilience. Due to the limited research within medical schools on CliftonStrengths® and first-year students in the medical profession the following research questions guided the study:

1. What difference is there in academic performance (based on basic science scores) between first-year medical students who have received training and results from the CliftonStrengths® assessment and those who have not?

2. What difference is there in self-efficacy between first-year medical students who received training and results from the CliftonStrengths® assessment and those who have not?

3. What difference is there in resiliency between first-year medical students who received training and results from the CliftonStrengths® assessment and those who have not?

Participants

The current study was conducted at a public state university in the Midwest with a diverse population of approximately 1,436 medical students. The university has several campuses across the state. Midwest University provided the researcher with data in order to determine the average number of admitted first-year students. The participants selected to participate in the study included approximately 365 first-year medical students at a Midwest university. The use of two criterion determined students for the study.

The first condition required all participants to be first-time medical school students. A second standard required all student participants attend new student orientation week. The study group was selected based on positive responses of students who received emails and elected to participate by giving their informed consent to the researcher.

The data collected for the study was from those students who elected to participate through their informed consent and voluntary participation. The total participants ($n = 87$) included a representation from multiple students. The participation, during the collection period occurred between August 2019 and March 2020 in both the control and experimental groups. The demographic of the sample group included males and females from various ethnicities, educational levels, age groups, and marital status within the United States.

The satellite campus participants ($n = 57$) became the experimental group. Regarding ethnicity, 44% of the sample were Caucasian ($n = 25$), 16 % were Black/ African American ($n = 9$), 12 % were Asian American/Chinese ($n = 7$), 5% were Hispanic/Latino American ($n = 3$), and 23% preferred to identify as Other/Self-Describe

(n = 13). As it relates to gender, 51% of the experimental group were female, and 49% were male.

Participants in the control group were asked to complete demographic information (Appendix B) voluntarily as part of the online form with the assessment. Demographic data was collected from individuals (n = 30) who participated in the study. Regarding ethnicity, 63% of the sample were Caucasian (n = 19), 7 % Black/African American (n = 2), 10 % were Asian American/Chinese (n = 3), 3% were Hispanic/Latino American (n = 1) and 17 % preferred to identify as Other/Self-Describe (n = 5). Regarding gender, 53% were female (n = 16), and 47% were male (n = 14).

When comparing the demographic data for the control and experimental groups one thing was noticeable in the demographic data. The balance between male and female between the two groups were very closely aligned.

<div align="center">Data Collection</div>

Approval of investigation for the study was obtained from the Institutional Review Board (IRB) from the degree granting institution. An informed consent was provided through Qualtrics to participants in the sample for purposes of informing participation and requirements, explaining the study, and obtaining each individual's voluntary consent to participate. Participants were informed to decline participation and the effect non-participation would have related to grades and coursework. Participants' confidentiality provided privacy, minimal and potential harm (Gay, Mills, & Airasian, 2012), while minimizing risks. The researcher further explained the purpose of the study was to gather research that could potentially benefit medical students academically.

Participants were told the results would be made available following the conclusion of the study.

The study utilized four survey instruments, the Sherer Modified Version General Self-Efficacy Scale, Duckworth 8-Item Short Grit Scale, the Body-Mind-Spirit Wellness Behavior, and Characteristic Inventory and the CliftonStrengths® assessment. These will be discussed in greater detail.

First-year medical students received an email approved by the Associate Dean of Students that permitted the researcher to disseminate information related to the study two days prior to student's arrival to campus for new student orientation in August 2019. Students received an email with information related to the research, study benefits, and a request for demographic information. No incentives were provided, but participants in the experimental group received the CliftonStrengths® assessment (valued at $24.99) at no charge for participation. Information clarification that there was no obligation to participate and no penalty for withdrawal or no effects to grades.

The first day of orientation, a reminder email provided the location of a classroom for participants to meet for the study. Students met during an evening session of orientation week in August 2019. Participants were allowed to use a tablet, phone or computer to access the assessment. Due to the low turnout, students ($n = 10$) were randomly assigned into one of two groups; the experimental group or the control group. The experimental group of participants were comprised of ($n = 6$) and the control group comprised of ($n = 4$) on the evening of orientation week.

The next day, after discussion with the Associate Dean of Students, the Dissertation Advisor, and IRB Director, a request to make an adjustment to the IRB was

approved. The change allowed the ability to disseminate the study statewide. A week

later, after orientation ended, a request was sent to satellite campus deans to support the

study and an email followed to students at the satellite campuses only. Two satellite

campuses agreed to serve as the experimental group ($n = 57$) participants, allowing the

CliftonStrengths® assessment workshop to be provided on site to interested participants

and training was provided.

The remaining satellite campuses served as the control group. Participants in the

control group ($n = 30$) represented four of the satellite campuses. These participants did

not receive training. Participants in both groups were administered the same protocol as

previously outlined in the initial plan, which included voluntary participation and

attendance at new student orientation. A numeric value to insure confidentiality was

established and used to de-identify all participants in both groups.

Instrumentation

CliftonStrengths®

The CliftonStrengths®, a web-based instrument was used for assessing strengths

and copyrighted with intellectual property and protected by Gallup (Rath, 2007). This

assessment was utilized as a primary manipulation. The strengths-based theory

established by Clifton (Asplund et al., 2014) provided the framework for development of

personal strengths. This measure, as Anderson (2005) suggested, assists students in

developing and applying strengths in reaching levels of personal excellence. The

instrument and the strengths-based approach is an outcome of many decades of research

(Asplund et al.). However, for the purpose of this research, the focus was on a work

developed in collaboration with the use of the instrument for students and the collaboration between Clifton and Rath (2007).

The CliftonStrengths® assessment identifies 34 talents or themes spread over four domains that include executing, influencing, relationship building and strategic thinking. The participants completing the assessment received their top five identified themes. The Gallup Organization identified themes after studying perceived top achievers over a period of three decades. The assessment used a 177 set of phrased "stimuli" (Asplund et al., p. 2). The researcher requested for inclusion in the document appendices a copy of the instrument. However, the Gallup Organization denied the request due to proprietary measures. The CliftonStrengths® instrument, copyrights, and intellectual property rights fully owned and protected by the Gallup Organization. For this reason, a copy of the instrument is not included. Sample questions allowed respondents to respond on a scale that altered between "neutral" and "strongly describes me" on both ends of the scale with options to choose in between each of the selections along the spectrum as shown in the example in Table 1.

Table 1

CliftonStrengths® Sample Questions

Strongly Describes Me	Neutral	Strongly Describe Me
I am a sensitive person.		I am a logical person.
I want everyone to like me.		I want people to adore me.

The researcher met in person with the experimental groups in August and December of 2019 to conduct two separate workshops on the CliftonStrengths® assessment at the satellite campuses. The experimental group received the same training

and feedback as participants during the initial training during orientation week in August 2019. Eight of the 10 students during orientation were participants at the satellite campuses. Two additional participants continued to participate and met with the researcher in person during the second training period to maintain consistency with the workshop content.

The first of two trainings began at the satellite campuses in August within two weeks after orientation week. The researcher provided individual CliftonStrengths® codes and directions on how to complete the assessment. The CliftonStrengths® assessment allowed a 20-second response on each question before the questionnaire prompted a move to the next item (Asplund et al., 2014). All participants were allowed approximately 30 minutes to complete the online assessment, which included setting up participant accounts.

Upon completion of the CliftonStrengths® assessment participants were instructed how to retrieve their individualized Strengths Insight Guide and Signature Themed Report and provided details regarding what each report entailed. During this training, they received descriptions of each of the 34 CliftonStrengths® Themes (Clifton Strengths Quick Reference Card, n.d.) and a brief overview of their results was discussed. In addition, participants began working on the first handout, the Name It!, Claim It!, Aim It! (Name It! Claim It! Aim It!, n.d.) activity. Participants utilized their Strengths Insight Guide to define how each theme resulted in greater self-efficacy and resiliency as it related to the activity. Each participant along with the assessment received a digital copy of the digital book (Rath, 2007). An hour was allotted for training. Students at both campuses were provided lunch during the workshop.

The second workshop in December at the satellite campuses provided an opportunity for a second training. During this training, another aspect of the CliftonStrengths® assessment was discussed. Participants reviewed their individualized reports. During this workshop participants learned how their talents contributed to team building and the four domains, strategic thinking, influencing, executing and relationship building (What are the Four Domains of CliftonStrengths?, n.d.) were discussed. The second workshop was intended to support team development throughout the first-year experience in medical school with the goal of helping individuals to understand how their personal strengths contributed toward team dynamics in medical school practice. The session concluded with an opportunity to allow participants time for reflection to gain additional insight or to ask questions related to their participation. An hour was allotted for training, and lunch was provided. Resources and activities used for the strengths-based interventions were both provided and developed by the Gallup Organization. The activities support development and served as supplemental material to the CliftonStrengths®.

Body-Mind-Spirit Wellness Behavior and Characteristic Inventory

The control group received the Body-Mind-Spirit Wellness Behavior and Characteristic Inventory (BMS-WBCI) developed by Hey et al. (2006) electronically via email in August during the same period the experimental group was participating in the CliftonStrengths® assessment. The control group did not receive training and feedback. The control group instructions were sent to participants with instructions that shared how to log into a Qualtrics form using a password supplied by the researcher. The instructions allowed participants access to The Body-Mind-Spirit Wellness Behavior and

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Characteristic Inventory (BMS-WBCI) assessment. Participants were asked demographic questions prior to the start of the survey. Information regarding consent was provided and provisions to discontinue at any time within the assessment without penalty were explained. A total of ($n = 35$) participants began the assessment, but due to partial completion, the final respondents totaled ($n = 30$). The respondent's total scores were tallied on the 44 statements. According to Hey et al. (2006), a raw score of 44-73 was described by the inventory as "need immediate behavior change to improve wellness lifestyle" (p. 131). A raw score of 74-103 stated "on the way to a wellness lifestyle, but behavior change is needed in certain areas" (p. 131). A raw score of 104-132 shared, "frequency of behaviors indicate that a healthy lifestyle exists" (p. 131).

The Body-Mind-Spirit Wellness Behavior and Characteristic Inventory (BMS-WBCI) related to wellness and focused on dimensions that included physical, emotional, intellectual, occupational, social and spiritual wellness. According to Hey et al. (2006), the instrument has a strong internal consistency of $a = 0.91$. The scale consisted of 44 items that comprised 3 subscales that included body, mind and spirit. Participants responded on a 3-point Likert scale. Leedy and Ormrod (2016) found Likert-type scales are tools that could be used to simplistically analyze, assess and quantify human behaviors and attitudes. Each item on the Likert scale survey was assigned a number one through three to denote which option was favored the most or the least. A total combined score was obtained for each of the options; the number 3 (often/always), 2 (occasionally/sometimes), and 1 (rarely seldom). Questions one through nine provided the body score. Example statements from this section included, "I limit risky behaviors." Another example stated, "I drink at least eight glasses of water a day." Statements 10

through 20 provided the mind score. Example statements from this section included, "I learn from my past life experiences." Another example stated, "I am open to new ideas." Statements 30 through 44 provided the spirit score. Example statements from this section included, "I experience peace of mind." Another example stated, "I experience self-satisfaction."

The wellness assessment provided the same time restraints as the strengths-based assessment. A link was provided to participants with instructions and permissions. They were provided the same opportunity to utilize an electronic device of their choice. Overall, the specific results of the data from the CliftonStrengths® assessment and wellness assessment were not the focus of the research.

Sherer General Self-Efficacy Scale

The Sherer General Self-Efficacy Scale (Sherer et al., 1982) is a 17-question scale that has been widely used in over 200 studies to measure self-efficacy. According to Chen, Gully and Eden (2001), the assessment has been subjected to many tests and shown a moderate to high level of internal consistency and reliability (a = .76 to .89). The researcher used the Sherer Modified General Self-Efficacy Scale (Henry, 2016), a Likert scale.

The researcher formerly requested the use of the modified scale in February 2019 from the author. Bandura (2012) suggested the scales guidelines could be tailored to address specific domains. The researcher was interested in understanding how the academic outcomes impacted students' self-efficacy. Henry (2016), noted academic outcomes was the tailored domain. Therefore, the researcher found this adapted study

addressed this area and requested of the author (Henry) permission to use the adapted 12

questions based on the criteria set by Bandura.

According to Henry (2016) the modified scale had a minimal internal consistency

of $a = .50$ (p. 42). The 12 statements allowed participants to respond on a 4-point Likert

scale from 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree). Example

statements from this scale included, "If something looks too complicated, I will not even

bother to try it." Another example stated, "I feel insecure about my academic ability."

The survey was conducted online using Qualtrics with all participants.

Duckworth 8-Item Short Grit Scale

The Duckworth 8-Item Short Grit Scale (Duckworth & Quinn, 2009) has been

widely used and measures resilience, also referred to as *grit*. Duckworth (2016) argues

that grit has two components that consists of passion and perseverance. The internal

consistency of the Grit Scale has $a = 0.85$ (Duckworth et al., 2007). The statements

allowed responses to eight statements to which participants responded on a 5-point Likert

scale; the number 5 (very much like me), 4 (mostly like me), 3 (somewhat like me), 2

(not much like me), and 1 (not like me at all). Questions two, four, seven and eight

provided the perseverance score. Example statements from the perseverance section

included, "Setbacks don't discourage me." Another example stated, "I am diligent."

Questions one, three, five and six provided the passion score. Example statements from

the passion section included, "New ideas and projects sometimes distract me from

previous ones." Another example stated, "I often set a goal, but later choose to pursue a

different one." The survey was conducted online using Qualtrics with all participants.

The semester ended the research study and the Sherer Modified General Self-Efficacy Scale (Henry, 2016) and the Duckworth 8-Item Short Grit Scale (Duckworth & Quinn, 2009) and four posttest open response questions (Appendix C), were conducted. Both surveys were administered to the experimental and control groups through Qualtrics and three to five minutes were allotted to complete both. Additionally, four open response survey questions were asked of participants. The researcher sent reminder requests to complete the posttest assessments to all participants in early February 2020 and one final attempt in March 2020 and received final participant posttest responses ($n = 33$). The researcher thanked all participants for their dedicated time.

The Academic Basic Science course scores were generated from exams taken on the basic science courses at the end of each course section. Scores were recorded on a scale of 0.00 to 100.00 and considered pass or fail as decided upon by Midwest University. The semester scores were obtained for the first exam that took place after training in August 2019 and the first exam that took place after training in December 2019. The score reports for both the experimental and control group was obtained and securely stored by the researcher.

Analytical Methods

Statistical analysis was conducted using IBM SPSS Statistics 26 software. The statistical data collected was uploaded directly to SPSS to limit the likelihood of errors. To address the research questions t-tests were used to analyze the data for the questions. According to Yockey (2016), an independent-samples t-test is used "when the means of two independent groups are compared on a continuous dependent variable of interest" (p. 71). The random selection method was used to form the official experiment and control

groups. A *p* value of .05 or less was used for each scale and subscale to determine the significance level of difference between the two groups.

To address research question one— What difference is there in academic performance in basic science courses (dependent variable) between first-year medical students who have received training and results from the CliftonStrengths® assessment and those who have not (independent variable)?—the researcher used an independent samples *t*-test to determine if any role academic performance had to influence the outcomes. Two course scores were graded on a scale from 0.00 to 100. The scores were retrieved in October and December upon final training for the experimental group. Grades were obtained for both the control and experimental group.

To address the second research question — What difference is there in self-efficacy (dependent variable) between first-year medical students who received training (independent variable) and results from the CliftonStrengths® assessment and those who have not?—the researcher used an independent samples *t*-test to investigate the difference between means to determine if any statistically significant difference had been achieved. This was measured using the Sherer Modified General Self-Efficacy Scale, Henry (2016).

To address the third research question—What difference is there in resiliency (dependent variable) between first-year medical students who received training (independent variable) and results from the CliftonStrengths® assessment and those who have not?—the researcher used an independent samples *t*-test to investigate if, statistically significant results were shown when resiliency (dependent variable) was measured using the Duckworth 8-Item Short Grit Scale (Grit-S), Duckworth and Quinn (2009).

Limitations

The following section describes limitations that were factors the researcher would have considered had they been foreseeable. The research is designed to generalize the effects of a strengths-based intervention on an academic achievement on first-year medical students. This study was conducted with 87 participants from a class of 365 first-year medical students at one institution in the Midwest rather than a larger sample of first-year medical students from several similar institutions. This could be a consideration for future research. A larger sample size would have provided a better opportunity to impact the general application of the CliftonStrengths® assessment.

A second limitation was the timing of the training. The researcher found the location and time of the initial training and semester workshops as a limitation. Based on when the study was offered, the evening of orientation was not the most opportune time for the event. A planned event during the week of scheduled orientation during the day may have been more advantageous because students were more attentive and energetic with more time to plan. Finally, a structured workshop throughout the semester would have provided synchronized participation throughout the semester and provided structured programming based on feedback from participants.

Finally, a limitation of the study was the existing body of research on the use of the CliftonStrengths® with first-year medical students. Research in this area does not currently exist for medical student populations. An opportunity to sample a larger population of varied medical school populations might be warranted.

Summary

Chapter III provided a detailed overview of the research design and the methods used. Additionally, it addressed research questions regarding strength based training, resiliency, and self-efficacy among first-year medical students and procedures used to collect the data. The researcher provided a through description of the population and demographics of individuals involved in the study. The statistical methods utilized to conduct the data analysis were also discussed. Chapter III detailed the explanation of the statistical procedures used to address the presented research questions. Further, the researcher identified limitations that may have had a potential impact on the findings within the study.

In Chapter IV, the researcher will provide an in-depth analysis of the research findings. It will include an interpretation of the data and provide implications from the study with recommendations for future research concerning the use of a strengths-based assessment tool to build self-efficacy and resiliency while increasing strengths-based outcomes in student learning and engagement in first-year medical students.

CHAPTER IV

FINDINGS AND CONCLUSIONS

Introduction

Chasing a lion into a pit on a snowy day takes two-o'clock-in-the-morning

courage. But that one act of courage completely changed the trajectory of

Benaiah's life. The same is true of you. You are one idea, one risk, one decision

away from a totally different life. Of course, it'll probably be the toughest

decision you ever make, the scariest risk you ever take. But if your dream doesn't

scare you, it's too small. (Batterson, 2019, p. 2)

Batterson illustrated the courage required of individuals pursuing difficult paths.

When individuals find their passion and seek to pursue it, the task of achievement may

not be as simple as expected. It will take perseverance and self-regulated behaviors to

endure.

According to researchers (Heinen et al., 2017), administrators have suggested

perceived stress in medical students is high and may be partially attributed to the

transition from undergraduate programs to graduate learning. The medical profession is a

highly demanding academic field and requires individuals to adjust to new and different

routines that incorporate varied methods of studying (McGrady et al., 2012). Many

individuals have aspired to become physicians, but the time and effort required may

cause even the most prepared to experience failure (Holland, 2016). This increased

pressure can lead to individuals stepping away from the pursuit and goals of a medical career. Medical students require more than a little physical courage to manage long nights of study and sleep deprivation (Azad et al., 2015). They also need an extra measure of resiliency, self-efficacy and wellbeing, which have been the central focus of the author's research.

Chapter I of the current research study introduced the background information, problem statement, and research questions in order to explore the impact of self-efficacy and resiliency on first year medical students who did or did not receive training on the CliftonStrengths®. Additionally, the research introduced terms, the significance of the study, and the process of accomplishing the research within the framework provided in the study's process.

Chapter II, the literature review, provided an overview of various theories and perspectives related to medical students. These areas included mental health and wellbeing, stress and burnout, resiliency and self-efficacy, and strengths-based opportunities for success that could potentially influence student performance. The literature provided an exploration of topics that revealed the need for scholarly research related to first-year support in the areas of student wellness, self-efficacy and resiliency, learning styles, and strengths-based approaches.

In Chapter III, the researcher addressed the study's research design and provided further details to the current study. The researcher provided a detailed explanation of statistical procedures used to address the research questions. These included a design that implemented a strengths-based training versus no training and examined the resulting impact on academic success in basic science courses, resiliency, and self-efficacy among

first-year medical students. Further, limitations were described in detail along with the provision of demographic information.

In Chapter IV, the researcher illustrates the findings and conclusions of the current study and provides a complete analysis of the true experimental research study. The study explored the impact training versus non-training on a strengths-based assessment would have on first year medical students' academic performance, resiliency, and self-efficacy at a Midwest, public university. The university is among one of the larger medical school programs in the country admitting approximately 365 students per year. Additionally, the chapter will include implications present in the findings based on the statistical procedures used to answer the research questions. The chapter culminates with an overview that examines implications and provides recommendations for future research related to first-year medical students.

Research Questions

The following research questions guided the current study.

1. What difference is there in academic performance (based on basic science scores) between first-year medical students who have received training and results from the CliftonStrengths® assessment and those who have not?

2. What difference is there in self-efficacy between first-year medical students who received training and results from the CliftonStrengths® assessment and those who have not?

3. What difference is there in resiliency between first-year medical students who received training and results from the CliftonStrengths® assessment and those who have not?

Findings

Research Question 1

Research Question 1 asked "What difference is there in academic performance (based on basic science scores) between first-year medical students who have received training and results from the CliftonStrengths® assessment and those who have not?

For research Question 1, the independent variable was the training group: training versus non-training. The academic performance in basic science course scores was the dependent variable. To determine equivalency of the experiment and control groups' statistical significance was determined using an independent samples t-test.

The researcher conducted two independent samples t-tests to compare the means on academic performance (based on basic science exam scores) between the control group, who was not trained and the experimental group, who was trained. The first exam score after training and the fourth exam score after training were used. The results indicated there was no statistically significant difference on the first exam score between those who were trained ($M = 81.20$, $SD = 9.67$) and those who received no training ($M = 83.28$, $SD = 7.87$); $t(85) = 1.01$, $p = .314$. Also, the training resulted in no statistically significant difference in the fourth exam score between those who were trained ($M = 81.70$, $SD = 9.73$) and those who received no training ($M = 80.86$, $SD = 6.97$); $t(85) = -.419$, $p = .676$. See Table 2 for results.

Table 2

Descriptive Statistics for Basic Science Exam Scores

Scores	Training			Without Training		
	N	*M*	*SD*	*N*	*M*	*SD*
First exam	57	81.20	9.67	30	83.28	7.87
Fourth exam	57	81.70	9.73	30	80.86	6.97

Research Question 2

Research Question 2 asked "What difference is there in self-efficacy between first-year medical students who received training and results from the CliftonStrengths® assessment and those who have not?"

For Research Question 2, the independent variable was the training group: training versus non-training group. The dependent variable was self-efficacy. In order to test the self-efficacy of first-year medical students who received training and results and those who had no training, the researcher conducted an independent samples *t*-test. The *t*-test was used to compare the means of a strengths-based intervention on students' self-efficacy.

After analysis, the researcher found no statistically significant difference in self-efficacy between those who were trained ($M = 2.69$, $SD = 0.26$) and those who received no training ($M = 2.73$, $SD = 0.13$); $t(31) = 0.73$, $p = .469$. Specifically, the researcher found no statistical significance difference between the experiment group who received training and those in the control group who did not receive training. See Table 3 for results.

Table 3

Descriptive Statistics for Self-Efficacy

Groups	*N*	*M*	*SD*
Training group	20	2.69	0.26
Non-training group	13	2.73	0.13

Research Question 3

Research Question 3 asked "What difference is there in resiliency between first-year medical students who received training and results from the CliftonStrengths® assessment and those who have not?"

For Research Question 3, the independent variable was the training group: trained vs. untrained group. The dependent variable was resiliency, also known as grit. Grit consists of two-factor conceptual dimensions: perseverance and passion. The researcher conducted an independent samples *t*-test to determine the statistical means and standard deviations of a strengths-based intervention on students' resiliency, between first year medical students who received training and results from the CliftonStrengths® assessment and those who had not received training.

After analysis, the researcher found there was no statistically significant difference in resiliency between those who were trained ($M = 3.59$, $SD = 0.59$) and those who received no training ($M = 3.58$, $SD = 0.37$); $t(31) = -0.06$ $p = .955$. Specifically, the researcher found no statistically significant differences in the experiment group who received training and those in the control group who received no training. See Table 4 for results.

Table 4

Descriptive Statistics for Resiliency

Groups	N	M	SD
Training group	20	3.59	0.59
Non-training group	13	3.58	0.37

Pertaining to question three, in order to test the resiliency two-factor dimensions of perseverance and passion, the researcher conducted independent samples *t*-test. The first independent samples *t*-test measured the perseverance of first-year medical students who received training ($M = 3.98$, $SD = 0.61$) and those without training ($M = 3.92$, $SD = 0.46$) in those conditions; $t(31) = -0.26$, $p = .794$. The results on perseverance demonstrated there was no statistical significance between those who received training and those without training. See Table 5 for results.

Table 5

Descriptive Statistics for Perseverance

Groups	N	M	SD
Training group	20	3.98	0.61
Non-training group	13	3.92	0.46

The second independent samples *t*-test measured passion of first-year medical students who received training ($M = 2.93$, $SD = 1.03$) and those without training ($M = 2.77$, $SD = 0.67$); $t(31) = -0.53$ $p = .604$. The results on passion yielded there was no statistical significance between those who received training and those who did not receive training. See Table 6 for results.

Table 6

Descriptive Statistics for Passion

Groups	*N*	*M*	*SD*
Training group	20	2.93	1.03
Non-training group	13	2.77	0.67

Finally, Table 7 shows the Top 5 most frequently reported themes within the list of 34 themes. Table 8 displays participants least frequently reported themes. However, four of the least frequent themes in Table 8 were equivalent in the number for each outcome, therefore included in the table. Table 9 reflects the participants overall theme domains. Results suggest participants are intentional in their approach, appreciate building relationships and understand how to carryout stated goals.

Table 7

Most Frequently Reported Top Five Signature Themes of Medical Students

Theme Dynamic	*f*	% of Participants
Restorative	25	43.86%
Harmony	21	36.84%
Achiever	16	28.07%
Learner	16	28.07%
Relator	16	28.07%

Note. *n* = 57

Table 8

Least Frequently Reported Signature Themes of Medical Students

Theme Dynamic	*f*	% of Participants
Belief	1	1.75%
Maximizer	1	1.75%
Self-Assurance	1	1.75%
Activator	3	5.26%
Connectedness	3	5.26%
Discipline	3	5.26%
Ideation	3	5.26%

Note. $n = 57$

Table 9

Frequencies and Percentages of Talent Theme Domains of Medical Students

Theme Domains	*f*	Percent of Participants
Relationship Building	91	31.93%
Executing	88	30.88%
Strategic Thinking	71	24.91%
Influencing	35	12.28%

Note. $n = 57$

The procedures allowed the researcher to assess the research questions to determine the differences between the two groups of first-year medical students who were trained and those who received no training.

The reaction to the final four open ended responses that followed the final assessments with participants ($n = 33$) provided further insight. The questions that were asked included,

1. What is your full first name, middle initial, last name? 2. Were you aware both groups were not participating in the CliftonStrengths® intervention? If yes, did you use that information to help them academically this semester? 3. What new insights do you have about yourself based on the study? 4. How would you have improved the study experience?

Based on the open-ended responses to question one, no participant acknowledged their awareness of other participants who were not participating in the research study. However, in question two, one respondent acknowledged the use of their strengths-based assessment and tools to support another non-participant academically during the fall semester. In open response question three, participants shared their insight regarding how the study impacted them personally. These open-ended responses appeared to show some consistency in regard to participants' understanding of themselves. In addition, how the CliftonStrengths® tool provided further definition and clarity to engage each with their individualized strength assessment. Participants mentioned the tool and training provided them with information they might have already known about themselves, but their detailed CliftonStrengths® reports provided clearer verbiage. Comments provided by participants described their thoughts regarding participation, experience and practical implications. These included:

- "Good reminder of what sorts of things I am good at doing" (Participant AH008)

- "Most of the things that were discovered during the CliftonStrengths® assessment were things that I knew to some extent already, but the study helped me understand myself more and also feel like the things that I experienced or preferred weren't unusual." (Participant AH011)

- "Loved strength finder, very great tool" (Participant AH012)

- "More valuable and descriptive words to describe my strengths" (Participant AH016)

- "I struggle to maintain focus on long-term projects/goals" (Participant AH018)

- "Having on paper some evidence about the kind of person my behavior indicates that I am will help me decide how best to study and where my possible limitations are." (Participant AH020)

- "The study made myself more aware of my strengths, which made it easier to judge what I enjoyed doing and what I didn't or what worked for me." (Participant AH022)

- "My strengths have changed" (Participant AH026)

- "How do I handle stress and how do I balance new ideas/thoughts with old thoughts and goals was evident." (Participant AH028)

In response to question four, participants described how the study experience might be improved. Individual responses included suggestions to create a curriculum for

first-year medical students and incorporate a process that provides individualized training.

- "More integrated into curriculum" (Participant AH01)

- "Maybe provide study tips per strength?" (Participant AH08)

- "I don't really have any suggestions. I think the study experience was fine." (Participant AH011)

- "Maybe integrate strengths in a brief writing assignment on Canvas" (Participant AH012)

- "We were given a list of strengths and encouraged to foster them. More suggestions about ways to foster those strengths and one-on-one follow-up could have been helpful." (Participant AH019)

- "It would have been nice to have some personalized training based on my specific strengths to better detail how to use those best." (Participant AH020)

- "Participating in the study didn't take up a lot of time over the school year and I'm thankful for that." (Participant AH022)

- "I felt it was pretty good because the questions were asked in multiple ways often about the same thing to get me to think about myself differently." (Participant AH028)

- "More questions" (Participant AH031)

The results of the data analyzed by the researcher in the current study did not demonstrate that a relationship exists between training in the results of the CliftonStrengths® assessment and academic basic science course scores of first-year medical students. However, participants in the study expressed that gaining a better

understanding of themselves helped with issues such as stress management. Participant AH028 shared the assessment provided them with an "understanding to determine how they handled stress. This allowed how they balanced new ideas and thoughts with old behaviors in order to achieve stated goals." It is possible these behaviors may have contributed to student success.

The courses in the first two years of the medical school curriculum prepare learners for the rigor they will face throughout their medical school journey. This intensity requires student's to adapt their learning (Samarakoon et al., 2013). The courses during this phase are based on the use of a pass-fail grading system (Krupat et al., 2017). The pass-fail method of scoring supports student well-being and has been shown to foster student success (Krupat et al.). According to Cleland et al. (2013) resources that provide a meaningful way for students to connect to alleviate stress are viable to academic performance. As previous studies have shown, the use of pass-fail grades has operated to reduce stress among students (Krupat et al.; Reed et al., 2011). Thereby, potentially increasing student self-efficacy and explaining the positive academic performance of participants.

The results of the data analyzed by the researcher in the current study did not demonstrate a relationship exists between training in the results of the CliftonStrengths® assessment and self-efficacy of first-year medical students. Despite the findings, participant feedback correlated to what researchers (Bandura, 2012; Klassen & Klassen, 2018) have expressed related to self-efficacy based on individual beliefs in performance and expectations. As Bandura stated, the presence of higher self-efficacy does not translate to improved performance. However, the assessment may have provided as

participant AH020 noted, "evidence about their behavior will support their ability to structure study habits and understand possible limitations."

Finally, the results of the data analyzed by the researcher in the current study did not demonstrate a relationship exists between training in the results of the CliftonStrengths® assessment and resiliency of first-year medical students. It is possible first-year medical students participated in programs throughout the semester that prepared them for academic resilience and perseverance (Hochanadel & Finamore, 2015) and thus participants had the opportunity to engage in activities beyond the research study to increase students' performance.

Conclusions

The current study provides opportunities to further the research and provides a framework on how to move forward with future development. The following recommendations should be considered.

First, the amount of time spent with participants in the study was limited and should be given adequate consideration. This impacted the amount of information that could be presented, which was less due to time constraints. As a solo researcher, the integration of a core of individuals in future research is highly encouraged. A ratio of one academic coach per 10 students could be more appropriate. The provision to lengthen the period of the study to exist for at least one year is advisable. This would allow six touchpoints within the year and provide an opportunity for deeper engagement with participants through the first-year phase of medical school.

Further opportunities could incorporate the full medical school cycle, whether a three- or four-year medical school program. An annual longitudinal study that

incorporates a structured program should be considered. The ability to monitor students over a longer period of time through the creation of curriculum would provide a long-term advantage. This course could include an outline that allows participation in modules throughout the year versus two workshops during one semester. The use of trained staff to develop and implement the curriculum could provide future growth in these efforts.

Second, advocating for strengths-based development provides individuals with informed decisions based on personal characteristics. Strengths development could foster opportunities for mentorship to align with an individual's professional growth. To understand fully the patterns that exist with professional care and career preference, a strengths-based measure such as the one conducted by Bloom (2018) with Doctor of Pharmacy students could be conducted with participating medical students.

Third, introducing the strengths-based assessment during orientation was an important start to exploring student's well-being in medical school. The wellness score, according to Hey et al. (2016) indicated on average that most students were in the middle range and suggested an individual "was on their way to a wellness lifestyle" (p. 131). Further research incorporating student wellness and its connection with overall student comfort and health upon entering medical school programs may prove beneficial. Future research may warrant measuring a student's overall well-being throughout their medical school program.

Fourth, the author acknowledges the study, as shared with the researcher by the Gallup organization, was the first known to have been conducted with medical school students in conjunction with CliftonStrengths®. A cross-sectional study may provide

further guidance and validity to this body of research. Additionally, further research could provide the potential for other medical school programs to participate.

Fifth, the overall demographics at the Midwest medical school closely mirrors the population of the students in the study. Therefore, the diversity within the population of participants was not in question at this institution. However, the number of participants and diversity inquiry require further consideration. Approximately one-fourth of the class participated in the research. Further research could expand characteristics such as age, degrees completed, first-generation and marital status, along with known disabilities.

A further review of medical students themes and theme classifications within the medical profession and how they can be incorporated into long-term application related to clinical practice may provide an opportunity for future growth in this area of research.

Implications and Recommendations

The findings for the research do not indicate a statistical significance for first-year medical students between those trained and untrained using the CliftonStrengths® assessment on academic basic science courses, resiliency and self-efficacy. Although, no statistically significant information was found, there were valuable outcomes to share.

First, research related to trends between groups of participants who were trained versus untrained might produce different results if conducted with a larger population. For example, one study utilizing several pharmacy school programs produced a larger sample size and varying signature theme results over three domains (Janke et al., 2015). The larger sample size and study results demonstrated strengths training supported student success and fostered wellbeing. Additional studies among medical school students could determine if theme dynamics are consistent within specific domains across

the medical profession. As shared by participants in their free responses in the current study, incorporating the use of the CliftonStrengths® assessment to all students may be desirable. Additionally, future semesters could provide opportunities for professional development of personal strengths throughout the four-year curriculum to graduation.

Second, a notable impression between the trained and untrained group was shown in academic performance. As displayed in Table 2, the median basic science exam scores of participants who were not trained prior to Exam 1 was slightly higher than those who received training by a difference of 2.08 points. However, the median score for the untrained group before Exam 4 dropped by 2.41 points, whereas the median exam score of those trained reflected a higher academic performance of .50 points after the same exam.

Third, although the results did not demonstrate statistical significance regarding self-efficacy, this could be due to the selection of medical school students. Students in medical schools are selected from among the highest achieving students and typically perform at high academic levels prior to medical school (AAMC, 2019). Their ability in themselves to achieve goals despite difficulty may be present before the start of medical school programs. Researchers (Artino et al., 2011; Zheng et al., 2020) suggested students with high self-efficacy who are capable of self-regulation are more likely to persist when difficulties arise.

Fourth, as it relates to resiliency, similar tendencies may be in play. Medical students begin medical school programs with a level of resiliency based upon their previous academic experience. Most enroll with critical thinking skills, a level of self-confidence and behaviors associated with professional identity. Their ability to rebound

after a setback is a part of their resilience and optimism (Comer et al., 2019; Kalet et al., 2017).

The subscales of resiliency, passion and perseverance, reveal the passion and perseverance scale of those trained was higher than those untrained, although not statistically significant. According to Hammond (2017), individuals who were trained on their talents (CliftonStrengths®), along with personal stamina coupled with academic achievement, may show an increased fortitude in these areas.

Finally, the Body-Mind-Spirit Wellness Behavior and Characteristic Inventory (BMS-WBCI) (Hey et al., 2006) is related to wellness and focuses on dimensions that include physical, emotional, intellectual, occupational, social and spiritual wellness. This inventory was provided to the group who did not receive training. The scale and subscales of body, mind and spirit were evaluated based on responses from the untrained group. As it relates to the participants ($n = 30$) who completed the inventory, the overall average score was 85. A raw score of 44-73 reflected "participants need immediate behavior change to improve wellness lifestyle" (p.131). A raw score of 74-103 reflected participants were "on the way to a wellness lifestyle, but behavior change is needed in certain areas" (p.131). A raw score of 104-132 indicated "frequency of behaviors indicate that a healthy lifestyle exists" (p.131). Deficiencies in any area within the six dimensions of wellness provide opportunities to design interventions along the subscales or overall raw score.

This chapter recapped the research background, foundational information and outcomes. A conclusion was drawn along with a summary, implications and

recommendations for future research opportunities related to a strengths-based approach to learning supporting medical school students.

Finally, this study sought to explain the relationship that exists between self-efficacy, resiliency and academic performance using a strengths-based approach. By providing an in-depth analysis of student's performance and outcomes, this study provided a deeper look at the nature of CliftonStrengths® in the development of medical school students and potential growth in utilizing the tool to further student learning and increase engagement and well-being.

It is the author's assessment that providing opportunities for medical school students to understand their unique talents promotes their sense of belonging and well-being. Opportunities for medical students to build healthier relationships with colleagues, staff and faculty support the quality of future relationships with the population they aim to serve through their leadership.

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Appendix A

Permission for Use of Sherer Modified General Self-Efficacy Scale

Permission for Use of Sherer Modified General Self-Efficacy Scale

Sure you can use it. Just mention me. Let me know if you need any help or have any further questions.

From: White, Linnette
Sent: Wednesday, February 5, 2020 3:55 PM
To: Henry, James L
Subject: RE: Request permission for access research study assessment...

Good evening Dr. Henry and thanks for your prompt response. Yes, I noticed your modifications and they are exactly what I seek in my assessment. The original inventory is approved. However, as dissertation and assessment usage apply, I am requesting to use your modified version of the proposed inventory. If that is agreeable, this email will suffice. If you would prefer I reach out through a phone call, I will plan to contact you tomorrow, Thursday, February 6th at 1:30 EST. Thanks for support in this effort.

From: Henry, James L
Sent: Wednesday, February 5, 2020 6:07 PM
To: White, Linnette
Subject: [External] Re: Request permission for access research study assessment...

All the information regarding the scale and its modification are in the dissertation. If you have any questions you can email me. or call me.

From: White, Linnette
Sent: Wednesday, February 5, 2020 2:25 PM
To: Henry, James L
Subject: FW: Request permission for access research study assessment...

Good evening Dr. Henry,

I am circling back again on a previous email and recently followed up on a phone call to your office regarding a request. If possible, would you please consider the use of your modified version of the Scherer General Self-Efficacy Scale? It aligns more appropriately to my study. Feel free to contact me with any further questions.

Thanks for your assistance,
Linnette C. White

Appendix B

Demographic Information

Demographic Information

1. What is your full first name, middle initial, last name?

2. What is your age?

3. What is your highest level of degree completion?

4. How would you describe your gender?

5. What is your legal marital status?

6. How would you describe your ethnicity?

7. What is your email address?

8. Type your initials for consent?

Appendix C

Posttest Open Response Questions

Posttest Open Response Questions

1. What is your full first name, middle initial, last name?
2. Were you aware both groups were not participating in the *CliftonStrengths®* intervention? Yes or No

   If yes, did you use that information to help them academically this semester?

3. What new insights do you have about yourself based on the study?

4. How would you have improved the study experience?