The Effect of a Second-Order Factor Wellness Intervention on the Total Wellness of Female Collegiate Athletes

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THE EFFECT OF A SECOND-ORDER FACTOR WELLNESS INTERVENTION ON THE
TOTAL WELLNESS OF FEMALE COLLEGIATE ATHLETES

A Dissertation
presented in partial fulfillment of requirements
for the degree of Doctor of Philosophy
in the Department of Leadership and Counselor Education
The University of Mississippi

by

MINDY L. DUNAGAN

May 2018
ABSTRACT

Given that college athletes focus a great deal of time on physical wellness, some might assume that they tend to enjoy higher levels of wellness than their non-athlete counterparts on campus. However, Watson and Kissinger (2007) found that the average wellness scores were higher for the undergraduate non-athlete students when compared to college athletes. More specifically, researchers have found that female collegiate athletes are more susceptible than male athletes to depression, anxiety, substance abuse, and eating disorders and report higher levels of stress (Brunet, 2010; Haupt, 1993; Hudd et al., 2000). In addition, there is a lack of research examining the best practices regarding interventions to help female collegiate athletes deal with their wellness issues. Therefore, this study was completed to determine whether a counseling-based second-order factor wellness intervention had an effect on the personal wellness scores of female collegiate athletes. Using a quasi-experimental, posttest-only control group design, a sample size of 66 female collegiate athletes was recruited. The participants were randomly assigned to the treatment or control group by sport. Participants in the treatment group participated in a 1-hour second-order factor wellness workshop. All participants were administered the Five Factor Wellness Inventory (FFWEL; Myers & Sweeney, 2005) to assess levels of wellness and the control group scores was used as a baseline measure. Data analysis involved using independent samples t-tests to determine the effect of the wellness workshop. The findings indicate that the female collegiate athletes who participated in a counseling-based second-order factor wellness workshop reported significantly higher levels of Total Wellness on the full FFWEL than those female athletes who did not participate in the wellness workshop.
However, not all the second-order factors and third-order factors on the FFWEL produced significant results. The implications of these findings are intended to assist coaches, athletic staff, and counselors as they work with female collegiate athletes and for female athletes as they seek to increase their wellness levels and thereby improve their athletic and academic performance.
DEDICATION

To Jasmine, you are greatly missed. Thank you for your unconditional love and your daily happiness.
# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>FFWEL</td>
<td>Five Factor Wellness Inventory</td>
</tr>
<tr>
<td>IS-WEL</td>
<td>Indivisible Self Model of Wellness</td>
</tr>
<tr>
<td>NCAA</td>
<td>National Collegiate Athletic Association</td>
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<tr>
<td>NJCAA</td>
<td>National Junior College Athletic Association</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
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<tr>
<td>WEL</td>
<td>Wellness Evaluation of Lifestyle</td>
</tr>
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<td>WHO</td>
<td>World Health Organization</td>
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</table>
ACKNOWLEDGMENTS

First, I want to thank God for giving me the strength to make it through this journey and for always being by my side. I would like to thank my family for their love and support and for always motivating me to pursue my dreams. Without all of you, I would not be where I am today. I love you all! Specifically, thank you mom for your encouraging phone calls and the endless drives up and down the highway to support me when I needed a little extra push or when I just needed a smile. Thank you dad and Jackie for your continuous motivation, reassurance, and faith. I am very grateful for your support during every aspect of this process. Thank you Lisa for being such an amazing big sister and wonderful role model. You truly inspire me everyday to be a better person and I am so thankful to have had all of your support since day one. Thank you Erin for sticking by my side throughout this journey. You have been my rock, my shoulder to cry on, and my sounding board. Thank you for always providing comfort and for being there to celebrate milestones along the way. Words truly cannot express how thankful I am to have you in my life. Jaden and Kieran, your endless hugs and sweet smiles everyday gave me motivation to keep on going. I hope I can continue to share my passion for education with you both as you continue to grow up. I would like to thank Caroline and Will for all of the joy you have brought to my life and for always brightening my day with your sweet giggles. Good-job! Thank you Allison and Bert for always understanding all the determination, energy, and focus that is required to be a PhD student. Your encouraging words and uplifting spirit helped make this experience more enjoyable. To Courtney, thank you for being there to encourage me at all times
during the day and for being such an amazing and faithful friend. To Swayze, Bane, Grizzlee, and Axel, thank you for the play time during stretch breaks and for always being by my side.

I would like to give a huge thank you to my dissertation committee. Thank you Dr. Suzanne Dugger, my dissertation chair, for your continuous support and unwavering acceptance. You always believed in me, challenged me, and advocated for me. Thank you Dr. John Chandler Dugger, III for being my methodologist and for your dedication and guidance. To Dr. Alex Kerwin, thank you for being an amazing mentor and always being there in a time of need. Thank you Dr. Marc Showalter for always providing such kind words of encouragement and for always putting your students first.

I would also like to thank my fellow doctoral students for all the laughs and memories we made during this journey. I am extremely grateful for Kim and Michelle. Thank you for all of the time you spent answering my many questions. I would also like to thank Drs. Balkin, Magruder, Perryman, Snow, and Winburn for your needed guidance and for the knowledge you all have shared with me throughout my time here at Ole Miss. To Dr. Megan Buning, all of the coaches, and all of the athletes in my study, thank you for your help and participation. Without you, this study would not have been possible.
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CHAPTER I: INTRODUCTION

Preventable chronic diseases and their major risk factors place huge economic demands on the United States (Centers for Disease Control and Prevention [CDC], 2016). Nearly 86% of health care dollars are spent on the treatment of individuals with chronic diseases. However, only 1% of health care dollars are spent on the prevention of chronic diseases (CDC, 2016). Myers and Sweeney (2005a) indicated that with education, social support, and healthy environments, individuals are more likely to engage in a well lifestyle. In the United States, health professionals encourage a well lifestyle among citizens (Gieck & Olsen, 2007), which is also a priority shared by college campuses (LaFountaine, Neisen, & Parsons, 2006). Therefore the introduction of wellness programs at the university level, to help individuals initiate and maintain greater health and wellness, has the potential to assist students in sustaining these behaviors over their lifetime (Fullerton, 2011; LaFountaine, Neisen, & Parsons, 2006).

Wellness is a term that has gained popularity over the past few decades in the United States (Myers & Sweeney, 2005a). The term has been used in magazines, the media, and books, as well as across an array of disciplines from medicine to counseling. Given the recent increase in popularity, several definitions of wellness have developed. To fully understand the concept of wellness, notable definitions of health and wellness need to be addressed.

In 1948, the World Health Organization (WHO) defined health as “a state of complete physical, mental, and social well-being, and not merely the absence of disease” (1948, p. 1). This definition indicates that an individual is considered to be well when there is a balance of
physical, psychological, and social aspects of life, and not only when physically well. Therefore, WHO (1948) implied that the physical, mental, and social areas of life are interconnected. The interconnectedness of these aspects contributes to an individual’s quality of life, which is also a main concept of wellness.

The modern wellness movement emerged in the 1950’s in the United States (Myers & Sweeney, 2005a). The first models, which were introduced by the medical field, focused on positive and healthy lifestyles (Ardell, 1977; Dunn, 1961; Hettler, 1984).

Dunn (1961), a medical practitioner, coined the term *high level wellness* while lecturing on well-being. These lectures eventually led to the development and publication of his book called *High Level Wellness*. Dunn (1961) defined high level wellness as,

An integrated method of functioning which is oriented toward maximizing the potential of which the individual is capable. It requires that the individual maintains a continuum of balance and purposeful direction within the environment where he or she is functioning (p.4).

Thus, Dunn (1961) proposed that wellness is a continuum. According to Dunn (1961), the individual needs to gain balance in his or her life in order to achieve a high level of wellness. Dunn (1961) believed the integration of mind, body, and spirit is essential for high level wellness to transpire.

Several decades later, the wellness concept spread to other professions such as the counseling profession. According to the counseling profession, wellness is defined as “a way of life oriented toward optimal health and well-being, in which body, mind, and spirit are integrated by the individual to live life more fully within the human and natural community” (Myers, Sweeney, & Witmer, 2000, p. 252). Because the focus of this dissertation was on an intervention
involving a wellness model created by Myers, Sweeney, and Witmer, their definition of wellness was used in this study.

Wellness is holistic. It is the interconnectedness of the mind, body, spirit, and environment of an individual. Although researchers have shown wellness to be essential over the course of an entire lifespan, college is a time where dimensions of wellness can be addressed and enhanced (Jones, Harel, & Levinson, 1992).

**Overview of Wellness in College Population**

On college campuses, athletes are a population with a reputation of being in prime physical health. Given that college athletes focus a great deal of time on physical wellness, some might assume that they tend to enjoy higher levels of wellness than their non-athlete counterparts on campus. However, Watson and Kissinger (2007) found that the average wellness scores were higher for the undergraduate non-athlete students when compared to college athletes. Although college athletes are likely to encounter similar stressors as other college students (i.e., time constraints, concern for future, and financial issues) as other college students (Cosh & Tully 2014), they must also cope with stressors such as intense physical training schedules as well as fears of and actual physical injury during their years in college (Watson & Kissinger, 2007). Sport becomes a stressor in many other ways because of performance pressure, constant evaluation, and the overall investment in the sport (Lazarus, 2000). Simon and Docherty (2014) reported that quality of life scores were lower in former college athletes when compared to non-athletes. This is a concern for college athletes, college coaches, athletic staff, and counselors.

Beyond reporting lower levels of overall wellness and quality of life, collegiate athletes are more susceptible to mental health distress due to the extra demands placed on them by their elite status (Ferrante & Etzel, 2009; Pinkerton, Hinz, & Barrow, 1987). The American College
Health Association (2012) found that 52.2% of undergraduate students reported their level of stress was at a “more than average to tremendous” level. Of these undergraduate students studied, 46.5% reported feeling hopeless, 31.6% reported feeling depressed making it hard to perform daily activities, and 7.5% considered suicide. Researchers have also found that the responsibility of balancing athletic and academic duties can worsen psychological concerns for collegiate athletes (Neal et al., 2013). Hinkle (1994) found that approximately 15% of collegiate athletes experience a level of distress that warrants counseling. For instance, one sample of collegiate athletes had 21% of participants who met clinical cutoff scores for depression (Yang, et al., 2007). Etzel (1989) found that collegiate athletes have higher levels of anxiety and irritably compared to their non-collegiate counterparts. Although the collegiate athlete population has been examined in regard to its wellness levels, there is a lack of research examining the best practices regarding interventions to help this population deal with their wellness issues.

Given the findings in the literature, more research is needed to understand wellness interventions for collegiate athletes, which will benefit athletes, coaches, athletic staff, and counselors. Myers and Sweeney (2005c) recommend only focusing on one or two wellness areas at a time when treating clients within the counseling setting. They contend that the remaining wellness areas will be impacted by the focused treatment interventions. Myers and Sweeney (2005c) report that, if the level of wellness does not increased to a desired level, counselors should then devise a wellness plan that focuses on a different area and then repeat the treatment. In addition, research is warranted to test Myers and Sweeney’s (2005c) contention that treating and implementing a wellness plan that focuses on one or two areas will impact other wellness factors and positively impact an individuals’ Total Wellness.
An effective but condensed intervention needed to be created to address the wellness concerns of collegiate athletes. A condensed intervention was ideal because of collegiate athletes’ constricted schedules, which was already a cause of distress. One such framework for implementing a wellness intervention was through the Indivisible Self Model of wellness (Myers & Sweeney, 2005b). This research study sought to contribute to the existing body of literature about wellness among athletes by examining a counseling-based wellness intervention. Previous researchers have examined wellness in undergraduate students (Gibson & Myers, 2006; Gieck & Olsen, 2007; LaFountaine, Neisen, & Parsons, 2006; Myers & Bechtel, 2004; Myers & Mobley, 2004; Osborn, 2005), collegiate athletes (Archer, Probert, & Gage, 1987; Beauchemin, 2014; LaFountaine, 2007; LaFountaine, 2009; VanRensburg, Suruajlal, & Dhurup, 2011; Watson & Kissinger, 2007), and undergraduate wellness seminars and workshops (Lockwood, & Wohl, 2012; McCormick & Lockwood, 2006; Robbins, Powers, & Rushton, 1992). However, few of the interventions used in these studies were based on an empirically-grounded theoretical model. In contrast, this study utilized interventions using an empirically sound counseling wellness model, the Indivisible Self Model (Stalnaker-Shofner & Manyam, 2014; Myers & Sweeney, 2005b).

The Indivisible Self Model (Myers and Sweeney, 2005b) is an evidence-based counseling wellness model. The model provides a perspective for conceptualizing wellness across the lifespan. Myers and Sweeney’s (2005b) Indivisible Self Model incorporates 17 separate wellness dimensions (third-order factors), five second-order factors, and one higher-order factor. The higher-order, or indivisible, factor represents the self or the individual holistically. The five second-order factors consist of the Coping Self, the Creative Self, the Essential Self, the Physical Self, and the Social Self. The five second-order factors have a combination of 17 dimensions that
contribute to the second-order factors (i.e. leisure, realistic beliefs, self-worth, and stress management constitute the Coping Self) (Myers & Sweeney, 2005b). Second-order factor wellness interventions have the potential to have great impact, but they had not been explored.

Statement of the Problem

Although a few holistic wellness interventions have been studied, the specific impacts of counseling-based second-order factor wellness interventions on the personal wellness of female collegiate athletes have not been adequately explored. By examining the impact of a second-order factor wellness intervention, the researcher was able to determine whether the intervention had a positive impact on the personal wellness of female collegiate athletes. In addition to managing many of the same personal and academic concerns as their non-collegiate counterparts, collegiate athletes must manage unique challenges associated with their athletic participation (Broughton & Neyer, 2001). Oftentimes, the weight of these challenges manifest as physical, emotional, social, spiritual, or developmental difficulties for collegiate athletes (Watson & Kissinger, 2007). Therefore, the implementation of a counseling-based wellness intervention focusing on the collegiate athlete as a total person was warranted. However, the impact of existing second-order factor wellness interventions on the personal wellness of female collegiate athletes had not be sufficiently explored.

Purpose

The purpose of this study was to determine if a counseling-based second-order factor wellness intervention had an affect on the personal wellness scores of female collegiate athletes. This study sought to identity factors that could potentially improve female collegiate athletes’ Total Wellness using Myers and Sweeney’s (2006) Five Factor Wellness and Habit Change
Workbook. Ultimately, this study sought to explore how a second-order factor wellness intervention impacted the personal wellness of female collegiate athletes.

**Research Questions and Hypotheses**

Measuring the impact of a counseling-based second-order factor wellness intervention on wellness of female collegiate athletes was the focus guiding this dissertation. Specifically, the following research questions were created to provide parameters for this study.

**Research Questions 1 (RQ1):** Do female collegiate athletes who have participated in a counseling-based second-order factor wellness workshop have higher levels of *Total Wellness* than those female athletes who have not participated in a wellness workshop?

- **H₀¹:** There will be no significant difference in the levels of *Total Wellness* of female athletes who have participated in a second-order factor wellness workshop when compared to female athletes who have not participated in a wellness workshop.

**Research Question 2 (RQ2):** Is there a difference in the levels of wellness between the female athletes who participated in a wellness workshop when compared to the female athletes who have not participated in a wellness workshop on any of the subscale scores of the wellness instrument?

- **H₀²:** There is no difference on any of the subscale scores when the female athletes who have participated in a wellness workshop are compared to the female athletes who have not participated in a wellness workshop.

**Research Question 3 (RQ3):** Do female collegiate athletes who have current or past sports related injuries have lower levels of *Total Wellness* than those female athletes who do not have or have had any sports related injuries?
**H₀₃**: There will be no significant difference in the levels of *Total Wellness* of female athletes who have current or past sports related injuries when compared to female athletes who do not have or had any sports related injuries.

**Definition of Terms**

This section addresses the theoretical and operational definitions of the key terms used in this study. The terms are defined as follows:

**Collegiate Athlete**: A collegiate athlete is an athlete who is currently listed on a collegiate varsity team roster and still has at least one season of eligibility remaining. Under the National Collegiate Athletic Association (NCAA) regulations, collegiate athletes are required to meet academic criteria to be eligible to participate in athletics during their first year. All athletes who participated in this study were athletes who were fully eligible and had met all requirements for athletic participation in the NCAA or NJCAA.

**Five Factor Wellness Inventory (FFWEL)**: The acronym FFWEL stands for Five Factor Wellness Inventory and it is an assessment created by Myers and Sweeney (2005b). This assessment is based on their Indivisible Self Model of wellness. The FFWEL consists of 91 items that are rated on a 4-point Likert scale. Scores range between 25 and 100 with higher scores representing greater self-reported wellness.

**Health**: This study utilized the World Health Organization’s definition of health as “a state of complete physical, mental, and social well-being, and not merely the absence of disease” (WHO, 1948, p. 1).

**Intervention**: The Encyclopedia of Metal Disorders defines an intervention as “any outside process that has the effect of modifying an individual’s behavior, cognition, or emotional state” (minddisorders.com, 2017, p.1)
**NCAA:** The National Collegiate Athletic Association (NCAA) is “a member-led organization dedicated to the well-being and lifelong success of college athletes” (p.1). The Association shares a belief in and commitment to these seven core values: 1) the collegiate model of athletics, 2) the highest levels of integrity and sportsmanship, 3) the pursuit of excellence in both academics and athletics, 4) the supporting role that intercollegiate athletics plays, 5) an inclusive culture, 6) respect, 7) presidential leadership. There are three divisions in the NCAA: Division I, II, and III (NCAA.org, 2015).

**NJCAA:** The National Junior College Athletic Association (NJCAA) is an organization that promotes, governs, and fosters a “competitive environment for two-year college athletics” (p. 2). The Association shares a belief in and commitment to these eleven core values: 1) academic and athletic excellence, 2) opportunity, 3) professionalism, 4) equity, 5) trust, 6) education, 7) generate opportunity, 8) leadership development, 9) competition, 10) communication, and 11) advocacy. There are three divisions in the NJCAA: Division I, II, and III (NJCAA.org, 2017).

**Non-Athlete Undergraduate Student:** Undergraduate college student who is currently enrolled at the university and is not listed on a collegiate varsity team roster.

**Second-order Factors:** Second-order factors refer to subscales of wellness. According to Myers and Sweeney’s (2005b) Indivisible Self wellness model, there are five factors (areas) that constitute the self, which is scored and termed as Total Wellness. The five second-order factors consist of the Coping Self, the Creative Self, the Essential Self, the Physical Self, and the Social Self. The five second-order factors have a combination of 17 dimensions that contributes to the second-order factors (i.e. leisure, realistic beliefs, self-worth, and stress management constitute the Coping Self) (Myers & Sweeney, 2005b).
**Total Wellness:** Myers, Sweeney, and Witmer define *Total Wellness* as the “general level of well-being” (2000, p.7). *Total Wellness* is comprised of the five subscales (*Coping Self, Creative Self, Essential Self, Physical Self, and Social Self*), and the FFWEL produces a composite score, which represents *Total Wellness*.

**Wellness:** Wellness refers to “a way of life oriented toward optimal health and well-being, in which body, mind, and spirit are integrated by the individual to live life more fully within the human and natural community” (Myers, Sweeney, & Witmer, 2000, p. 252).

**Wellness Factors:** Wellness factors refer to the areas of wellness in Myers and Sweeney’s (2005a) wellness model. The factors are the *Coping Self, the Creative Self, the Essential Self, the Physical Self, and the Social Self*. Myers and Sweeney (2005a) assessed these wellness factors with the FFWEL, which yields scale scores for each of the five factors as well as a composite score, which denotes *Total Wellness*.

**Wellness Intervention:** For this study, a wellness intervention involves the administration of an educational seminar and workshop related to wellness. This wellness intervention involved a psycheducational introduction to the concept of wellness, and the Indivisible Self Wellness Model (Myers & Sweeney, 2005b), a lesson focused on the model’s second-order factor, the *Coping Self*, and an activity in which participants were supported in their development of a related personal wellness plan based on the *Coping Self*.

**Wellness Plan:** A wellness plan sets specific goals for improvement and change, based on one or more identified aspects of wellness. The wellness plan targets a) the meaning of an area of wellness, b) satisfaction with present state of wellness in that area, c) goals and objectives for enhancing wellness in that specific area, d) assets and barriers to achieving goals, e) personal resources for achieving greater wellness, and f) methods and strategies for achieving greater
wellness. Although Myers, Sweeney, and Witmer (2000) recommended initially focusing on only one or two aspects of wellness, participants in this study focused on one second-order factor, the Coping Self (Myers et. al, 2000).

**Statement of Limitations**

Limitations exist within this study because of sample size and the generalizability of the study. The generalization of the results is limited based on the population selected. The population selected was female collegiate athletes. The athletes in this study were required to self-report their levels of wellness which is a limitation because self-reports can rarely be independently verified. Instead, self-reports must be taken at face value. In addition, the athletes in the wellness workshop learned and devised a personal wellness plan. After the athletes devised a plan, they were advised to implement the wellness plan. However, this study did not provide any way of knowing if the athletes actually implemented their plan.

**Statement of Delimitations**

The following were delimitations or restrictions enforced by the researcher:

1. The participants of the study were females. This study did not examine the wellness of males.
2. The participants were also collegiate athletes. This study did not examine wellness of non-collegiate athletes.
3. The concept of wellness was delimited to the self-reported perceptions of those participants because their actual wellness was not measured objectively.

**Assumptions**

There were several assumptions made during this study. The researcher assumed that the participants were truthful when reporting assessment items because their responses were
anonymous. The researcher also assumed that collegiate athlete *Total Wellness* would be impacted depending on time of semester and by whether the athletes’ sport is in season or off season. It was assumed that those athletes who would be in season during this study would show lower scores on wellness than those athletes who were not in season. In addition, this study took place near the middle of a semester, which might produce slightly different wellness score results than if this study was replicated during the middle or end of a semester.

**Summary**

In summary, chapter 1 discussed the statement of the problem, the purpose of the study, the research questions and hypotheses, definitions of terms, assumptions, and limitations and delimitations. Chapter 2 will provide a literature review that explores wellness models, wellness interventions, and wellness among athletes. Chapter 3 will provide the methodology of the study, which includes research design, selection of participants, instrumentation, and the data analysis procedure.
CHAPTER II: LITERATURE REVIEW

Introduction

The purpose of this chapter is to present a synthesis of the literature relevant to this research study. The construct of wellness, wellness models, wellness assessments, and wellness interventions are explored. Additionally, wellness literature pertaining specifically to college students, collegiate athletes, and female collegiate athletes will be examined.

Overview of Wellness

College students consider wellness to consist of physical, psychological, and social aspects that frequently overlap (Archer, et al., 1987). Researchers have found that college students with high levels of psychological wellness tended to be the students with a greater perceived social support network (Brougham, Zail, Mendoza, & Miller, 2009; Dwyer & Cummings, 2001; Wang & Castaneda-Sound, 2008). More specifically, college students reported that the quality of their friendships impacted their psychological wellness and their work satisfaction (Hermon & Hazler, 1999). Additionally, college students with a greater perceived social support network report fewer academic trepidations (Dwyer & Cummings, 2001).

Although collegiate athletes are considered to be in optimal physical condition when not injured, they often experience hardship in other areas of wellness similarly to their non-athlete peers. For example, collegiate athletes and non-athlete college students experience financial issues, time management struggles, and trepidations about the future. In addition to these adversities, collegiate athletes experience a unique array of stressors. Athletes may experience
physical or psychological issues pertaining to their sport performance, they may struggle with balance between their sport and academia, and they may struggle to form social interactions outside their sport (Brewer, Linder, & Phelps, 1995; Cosh & Tully, 2014; Etzel, Watson, Visek, & Maniar, 2006; McAllister, Motamedi, Hame, Shapiro, et al., 2001; Royal & Rossi, 1993). Due to these unique stressors, college campuses have provided additional resources for collegiate athletes. For instance, many universities offer separate counseling and psychological services to and dedicate study sessions for their athletes.

Even though collegiate athletes tend to be in optimal physical condition, this does not mean that their holistic wellness is any greater than their non-athlete peers. As research has shown, many collegiate athletes have additional stressors and have issues with their quality of life. Therefore, a section of the National Collegiate Athletic Association’s (NCAA) mission is to improve collegiate athletes’ quality of life, which extends past sport (Brown & Blanton, 2002; Etzel et al., 2006). Thus, understanding the philosophical underpinnings of wellness research is necessary. The next section consists of a brief discussion of the foundation of wellness models from the medical to the psychological field followed by an examination of two empirically grounded wellness models within the field of counseling.

Models of Wellness

The term wellness had been used for decades when the World Health Organization (WHO) defined the term in the 1940’s. WHO (1948) originally used the terms wellness and health interchangeably. Health and wellness, as defined by WHO is “a state of complete physical, mental, and social well-being, and not merely the absence of disease” (1948, p. 1).

Hettler (1984) was considered the founder of the holistic wellness movement in the 1970’s after his creation of the first wellness institute. The National Wellness Institute was
officially formed in 1977 after Hettler and two other colleagues joined together with the “idea that we, as humans, could live better, healthier lives through the principles of balance and awareness” (National Wellness Institute, n.d., para.1). Hettler (1984) postulated that health and wellness were in fact different from one another. According to Hettler (1984) “wellness is an active process through which people become aware of, and make choices toward, a more successful existence” (p.4). Overall, Hettler (1984) designed a model that explained occupational, physical, social, intellectual, spiritual, and emotional wellness. The components of Hettler’s model are in Table 1 below.
### Table 1

**An Outline of the Six Dimensions of Hettler’s Wellness Model**

<table>
<thead>
<tr>
<th>Wellness Dimension</th>
<th>Description</th>
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<tbody>
<tr>
<td>Occupational</td>
<td>Occupational wellness is related to an individual’s attitude and satisfaction regarding his or her work. Being able to use one’s skills and abilities at work provide for higher levels of occupational wellness.</td>
</tr>
<tr>
<td>Physical</td>
<td>Physical wellness focuses on the need for physical activity and adequate nutrition. Refraining from tobacco and drugs and a good combination of nutrition and exercise are recommended for optimal health. This dimension also addresses the need for proper medical and dental attention.</td>
</tr>
<tr>
<td>Social</td>
<td>Social wellness is contributing to one’s environment and community. To have optimal social wellness, it is best to put the welfare of others before one’s self and to live in harmony with one’s surroundings.</td>
</tr>
<tr>
<td>Intellectual</td>
<td>Intellectual wellness refers to expanding one’s knowledge and engaging in stimulating mental activities. Choosing appropriate actions and challenging the mind is best for optimal intellectual wellness.</td>
</tr>
<tr>
<td>Spiritual</td>
<td>Spiritual wellness refers to the search for meaning and tolerance of the viewpoints of others. Optimal spiritual wellness also refers to living a life that reflects an individual’s own values and beliefs.</td>
</tr>
<tr>
<td>Emotional</td>
<td>Emotional wellness refers to the acceptance of one’s feelings and the ability to manage those feelings appropriately. For optimal emotional wellness, an individual will be able to effectively cope with his or her feelings and to express him or herself freely. Overall, a positive outlook on life will be beneficial for holistic wellness.</td>
</tr>
</tbody>
</table>

Although Hettler’s model was first coined as being holistic, the original version placed heavy emphasis on the physical component of his wellness model (Myers, Sweeney, & Witmer, 2000). Similarly, several other models within the medical and mental health fields have been
established, but they are not holistic and the majority are not empirically based models (Ardell, 1977; Dunn, 1961).

The two theoretically and empirically based wellness models within the field of counseling are the Wheel of Wellness (Sweeney & Witmer, 1991; Witmer & Sweeney, 1992) and the Indivisible-Self Wellness Model (Myers & Sweeney, 2005b). Both of these models have theoretical underpinnings stemming from Adlerian Individual Psychology (Adler, 1954; Ansbacher & Ansbacher, 1967). According to Vaughan (1927), Adler believed everyone lives to achieve his or her own superiority. In addition, as referenced in an article by Myers and colleagues (2000), Adler postulated that individuals strive to have social interactions and need them to achieve a greater well-being. Collegiate athletes bond with teammates and share an interest with their teammates and coaches. Therefore, collegiate athletes would be an example of a group of individuals socially interacting successfully. Research conducted on teammate bonding suggests that athletes with higher levels of teammate bonding have a higher level of well-being than their teammates who have not bonded with their teammates (Corbillion, Crossman & Jamieson, 2008). Moreover, teammate bonding is vital when an active athlete sustains an injury.

Numerous researchers have found that social support is beneficial to an athlete’s well-being when recovering from an injury (Chwalisz & Vaux, 2000; Gould, Udry, Hardy & Grace, 1993; Hardy, Richman, & Rosenfeld, 1991; Mainwaring, 1999; Udry, 1997). Teammates, coaches, family members, and friends all provide a different type of support when it comes to an athlete’s recovery (Petitpas, 1999). In addition, every type of social support contributes to the athlete’s well-being (Corbillion, Crossman, & Jamieson, 2008).
Wheel of Wellness

Sweeney and Witmer (1991) developed the Wheel of Wellness model, which has been researched in behavior based fields and the medical field (Brown, Applegate, Yildiz, 2015; Chang & Myers, 2003; Hattie, Myers, & Sweeney, 2004; Myers & Bechtel, 2004; Myers, Luecht, & Sweeney, 2004; Myers, Mobley, & Booth, 2003; Myers & Williard, 2003; Shurts & Myers, 2002; Sinclair & Myers, 2001). Based on research findings, the Wheel of Wellness was revised (Myers, Sweeney, & Witmer, 2000). The model was used to help identify an individual’s level of wellness and can be used in counseling, psychology, health care settings, or academia. The wheel encompassed five “life tasks” including spirituality, self-regulation, work/leisure, friendship and love. The center of the wellness wheel was spirituality and the meaning behind the circle was that the five areas are connected and overlapping. A change in one area may produce a change in another area. In addition, the model represented the individual holistically. The spirit life task, or spiritually, was at the center of the wheel. The spokes of the wheels represented life tasks consisting of a) sense of worth, b) sense of control, c) realistic beliefs, d) spontaneous and emotional response, e) intellectual stimulation, problem solving, and creativity, f) sense of humor, and g) physical fitness and nutrition. The rims consisted of the friendship, work, and love tasks (Hattie, et. al, 2004; Myers & Sweeney, 2005a).

In 1998, Myers, Sweeney, and Witmer also developed the Wellness Evaluation of Lifestyle (WEL) inventory to assess each of the five life tasks and the subtasks of the Wheel of Wellness. The research using the WEL led to the addition of more subtasks and a revised model of the Wheel of Wellness. The revised model, still currently in use, consists of twelve spokes, which are termed subtasks. The subtasks consist of a) sense of worth, b) sense of control, c) realistic beliefs, d) emotional awareness and coping, e) problem solving and creativity, f) sense
of humor, g) nutrition, h) exercise, i) self-care, j) stress management, k) gender identity, and l) cultural identity. On the outside of the rims (friendship, work, and love), there are seven tasks. This is a new level that was added to the revised model. The tasks on this level consist of a) business/industry, b) media, c) government, d) community, e) family, f) religion, and g) education (Myers & Sweeney, 2005a). Witmer, Sweeney, and Myers’ (1998) visual depiction of the Wheel of Wellness can be seen in Figure 1 below.
The revised version of the Wheel of Wellness (Myers, Sweeney, & Witmer, 2000) continued to be assessed using the Wellness Evaluation of Lifestyle Inventory (WEL; Myers, Sweeney, & Witmer, 2011, 2000). Hattie, Myers, & Sweeney (2004) reexamined the Wheel of Wellness to better categorize the factors. The results of the reexamination eventually led to a new
model of wellness (Myers et al., 2004; Myers & Sweeney, 2005b). However, both the 2000 model and the 2004 model are still used. Hattie and colleagues (2004) explained that the 2000 version of the Wheel of Wellness is still practical in regard to teaching and explaining wellness. For example, the Wheel of Wellness is useful when explaining holistic wellness to clients or when teaching wellness within an education setting. The 2004 model, the Indivisible Self Model, added second- and third-order factors and is useful primarily for practitioners. The Wellness Evaluation of Lifestyle Inventory, which is an assessment instrument that was developed from Wheel of Wellness model, is described in the following section. A brief overview of the models and assessments of wellness are presented in Table 2.

Table 2

Overview of the Wellness Models and Assessments

<table>
<thead>
<tr>
<th>Model</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indivisible Self Model (IS-Wel) (2004)</td>
<td>FFWEL</td>
</tr>
</tbody>
</table>

The Wellness Evaluation of Lifestyle Inventory

The Wellness Evaluation of Lifestyle was developed to assess the five life tasks and subtasks of the Wheel of Wellness model (Myers, 2004; Myers, Sweeney, & Witmer 1998). Myers et al. (1998) conducted a series of four studies over a six-year period to test and improve the psychometric properties of the WEL. The first form of the assessment consisted of 132 items that covered all aspects of the wellness model (Myers, 2003). All items were assessed on a 5-point Likert scale ranging from strongly agree to strongly disagree. The assessment was administered to roughly 2000 people ages 18 to 91. Scales that were not sufficiently reliable were disregarded. The revision of the WEL consisted of 103 items and was administered to roughly 3000 people ages 10 to almost 100 (Hattie, Myers, & Sweeney, 2004). This research
indicated that additional factors had emerged. Therefore, the Indivisible Self Model was developed and an additional assessment was created to correspond with that model.

**The Indivisible Self Model**

After the revised Wheel of Wellness was reevaluated, a new model, called the Indivisible Self Model (IS-Wel), was developed (Myers and Sweeney, 2005b). Whereas the revised model consisted of attention to a) sense of worth, b) sense of control, c) realistic beliefs, d) emotional awareness, e) problem solving and creativity, f) sense of humor, g) nutrition, h) exercise, i) self-care, j) stress management, k) gender identity, and l) cultural identity, the IS-Wel was organized according to factors of self and contextual variables. The *Indivisible* factor in the model is the highest order and represents the individual. The second-order consists of five factors and the third-order consists of seventeen sub-categories. The second-order factors and the corresponding third-order factors are presented in Table 3.
## Table 3

*Second and Third Order Factors in the Indivisible Self Model*

<table>
<thead>
<tr>
<th>Second-Order Factors</th>
<th>Third-Order Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping Self – the balancing of behavioral and psychological responses to life events</td>
<td>Leisure – achieving gratification from activities done in one’s free time without feeling guilty</td>
</tr>
<tr>
<td></td>
<td>Realistic Beliefs – perceiving reality accurately, understanding perfection does not exist, and comprehending that being loved by everyone is an unrealistic goal</td>
</tr>
<tr>
<td></td>
<td>Self-Worth – understanding the self is not perfect and having the ability to see oneself as unique</td>
</tr>
<tr>
<td></td>
<td>Stress Management – having the ability to cope and organize resources and to accept change as an opportunity for growth rather than a disadvantage</td>
</tr>
<tr>
<td>Creative Self – Unique individual qualities that empower a positive worldview</td>
<td>Control – having the ability to be assertive and confident in achieving goals in life</td>
</tr>
<tr>
<td></td>
<td>Emotions – being able to express feelings appropriately and to cope with emotions regularly</td>
</tr>
<tr>
<td></td>
<td>Positive Humor – having the ability to see humor in others and in one self. In addition, being able to use humor in appropriate circumstances</td>
</tr>
<tr>
<td></td>
<td>Thinking – having the ability to problem solve and to be creative. In addition, being able to be open-minded</td>
</tr>
<tr>
<td></td>
<td>Work – using skills and abilities at work while being satisfied with one’s work</td>
</tr>
<tr>
<td>Essential Self – making meaning of the world, others, and ourselves</td>
<td>Cultural Identity – being supportive of and satisfied with one’s cultural identity</td>
</tr>
<tr>
<td></td>
<td>Gender Identity – being supportive of and satisfied with one’s gender identity</td>
</tr>
<tr>
<td></td>
<td>Self-Care – having the willingness to take responsibility for one’s well-being. Being able to abstain from harmful substances and unhealthy habits</td>
</tr>
<tr>
<td></td>
<td>Spirituality – practicing and believing that one is more than the mind and body. Having the ability to be one with the universe</td>
</tr>
</tbody>
</table>
Physical Self – aspects that affect our development

Exercise – engaging in physical activity on a regular basis, but not overdoing it

Nutrition – eating healthy foods, while maintaining a healthy weight

Social Self – social support systems that include friend and other relationships

Friendship – having the ability to maintain relationships that are not sexual, marital, or familial and being comfortable interacting with others. These relationships should be trusting and non-judgmental.

Love – the ability to be intimate and affectionate with significant others. This relationship is a mutual commitment that is secure and lasting.

The contextual variables component consists of a) “chronometrical contexts,” b) “global contexts,” c) “institutional contexts,” and d) “local contexts” (Myers & Sweeney, 2004a, 2005b, pp. 8-9). The contextual variable scales of the instrument are presented in Table 4 below.

Table 4

<table>
<thead>
<tr>
<th>Context</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronometrical Context</td>
<td>Change, movement, and growth in an individual’s life.</td>
</tr>
<tr>
<td>Global Context</td>
<td>The influence of politics, culture, global events, and the environment on an individual.</td>
</tr>
<tr>
<td>Institutional Context</td>
<td>The influence of education, religion, government, business, and the media on and individual’s life.</td>
</tr>
<tr>
<td>Local Context</td>
<td>An individual’s perception of safety in his or her community, neighborhood, and family.</td>
</tr>
</tbody>
</table>

The Indivisible Self Model is an evidence-based model of wellness and emerged from factor analytic studies based on the earlier wellness model, the Wheel of Wellness (Myers, et. al, 2004; Myers & Sweeney, 2005b, 2005c). The model organizes the components of wellness into
more efficient categories unlike the Wheel of Wellness. A visual depiction of the Indivisible Self Model can be seen in Figure 2 below.

**Figure 2.** The Indivisible Self: An evidence-based model of wellness (Sweeney & Myers, 2003, p. 6).

![Image of the Indivisible Self Model](image)

**The Five Factor Wellness Inventory**

The Five Factor Wellness Inventory (FFWEL) was designed to measure the IS-Wel. The FFWEL is similar to the Wellness Evaluation of Lifestyle; however it incorporates the factors that emerged during research conducted with the Wellness Evaluation of Lifestyle (Myers & Sweeney, 1999; Myers & Sweeney, 2005a). The components added were the Creative Self, the Coping Self, the Essential Self, the Physical Self, and the Social Self. The FFWEL consists of 91 items that are rated on a 4-point Likert scale. Most items, except for the items on the realistic
beliefs subscale and one item on the self-care subscale, are worded positively and are scored with 1 being strongly disagree and 4 being strongly agree. In contrast, the items on the realistic beliefs subscale and one item on the self-care scale are reversed scored with 4 being strongly disagree and 1 being strongly agree. Raw scores on all scales are converted to a standard score ranging from 25 to 100 with higher scores representing greater wellness. The FFWEL reliability estimates are alpha coefficients of internal consistency which range from .98 for Total Wellness, .96 for the Creative Self, 96 for the Social Self, .95 for the Essential Self, .90 for the Physical Self, and .89 for the Coping Self. Chapter 3 will provide additional details about the reliability and validity of the FFWEL.

**Wellness of College Students**

Although researchers have determined that wellness is beneficial over the course of a lifespan, college is one of the times where wellness can be challenged as well as enhanced (Jones, Harel, & Levinson, 1992). According to Myers and Mobley (2004) college wellness programs (wellness courses) are a way to promote greater wellness among college students. In addition, counseling sessions focused on specific elements of wellness, such as realistic beliefs, may improve the well-being of students (Myers & Mobley, 2004). The following is a review of the studies pertaining to wellness in college students.

Research conducted by Myers and Mobley (2004) compared the results of the FFWEL for over 1,500 college students, including traditional students who were under 25 and non-traditional students who were 25 or older, as well as a comparison group of more than 700 adults who were not college students. After controlling for age, the researchers found that college students (both traditional and non-tradition) scored lower than the non-students on several components of wellness. For example, college students scored lower on the Creative Self, the
Essential Self, and the Social Self than the non-students. When traditional students and non-traditional students were compared, traditional students had lower overall levels of Total Wellness than their non-traditional counterparts. Additionally, traditional students scored lowest in the realistic beliefs third-order factor. The authors stated that the realistic belief factor was most likely lowest because of the consensus that college students have unrealistic beliefs about their abilities.

In contrast, Myers and Mobley (2004) found that traditional and non-traditional college students scored higher than non-students on the leisure and exercise factors of wellness. The authors concluded that college students scored higher on the exercise third-order factor because they have access to recreational facilities and speculated that college students’ leisure factor mean scores were also higher than non-students’ because an increase in wellness in one factor tends to increase wellness levels in another factor (i.e. if the exercise factor mean score is high, the leisure factor score may also increase) (Myers & Mobley, 2004). However, although the participants in the Myers and Mobley (2004) study may or may not have been engaging in sufficient levels of exercise, Buckworth and Nigg (2004) found that not all college students are receiving enough physical activity according to the U.S. Department of Health and Human Services’ recommendation. Buckworth and Nigg (2004) evaluated nearly 500 students enrolled in physical activity classes. The authors assessed the participants before the beginning of the semester and at the end of the semester. The results indicated that half the students were not engaging in enough physical activity. Although Buckworth and Nigg (2004) found that half of college students were not engaging in enough physical activity, college athletes represent a subpopulation of college students that are likely to engage in sufficient physical activity.
Although the general college student population includes the majority of students, this research is not generalizable to all collegiate sub-groups. For example, the collegiate athlete population shares many of the stressors as their non-athlete peers; however, collegiate athletes also experience additional stressors not typically experienced by non-athletes. The following section will review the research pertaining to wellness in collegiate athletes.

**Wellness of Collegiate Athletes**

Although most collegiate athletes find participating in college sports satisfying (Gayles, 2009), they may also suffer from issues brought on by stress (Watson & Kissinger, 2007). Student athletes have added stressors when compared to their non-student athlete peers, such as time management, social isolation (Ford, 2007), and physical exhaustion (van Zyl, Surujlal, & Singh, 2009). Student athletes face additional pressure to succeed in sports as well as class, and find it difficult to give priority to one or the other (Ford, 2007). Gayles (2009) reported that the learning experience of student athletes was much more likely to be positive when they participate equally in academic and sports-related pursuits. These results suggest that holistic wellness is important for a positive experience for collegiate athletes. In order to effectively manage their health and stress, collegiate athletes need to understand their own wellness (Watson & Kissinger, 2007).

Two of the biggest stressors for collegiate student athletes are additional obligations and lack of time (Beauchemin, 2014). Additional obligations can include practices, games, travel, and team events. These obligations can lead to minimal time in the athlete’s schedule for other activities. Other stressors include physical demands, over training, sleep deprivation, campus isolation, and injury (Etzel, Watson, Visek, & Maniar, 2006).
According to a study done on 157 students at a large university, including 62 collegiate athletes and 95 non-athletes, average wellness scores from the Five Factor Wellness Inventory (FFWEL) were higher for non-athletes (Watson & Kissinger, 2007). Although the collegiate athletes achieved their highest scores in the Social Self second-order factor of wellness, the scores were still significantly lower than the non-athlete students in the same category. Watson and Kissinger (2007) explained collegiate athletes’ low scores for social interactions by their time constraints and busy schedules. In addition, the group of collegiate athletes achieved lower mean scores in the Essential Self subscale than their non-athlete counterparts. Scores on the Essential Self subscale are affected by one’s sense of purpose and meaning in life. Limitations of this study include a small sample size of collegiate athletes and a lack of information about other variables that may affect one’s perception of wellness, such as scholarship status, year of education, and history of injuries.

The majority of collegiate athletes face similar stressors. However, race and gender contribute to additional challenges faced by collegiate athletes (Cooper & Hawkins, 2014). Cultural differences impact the perception and experiences of student athletes. African-American collegiate athletes face the additional challenge of overcoming racial stereotyping (Martin, Harrison, Stone, & Lawrence, 2010). Cooper and Hawkins (2014) reported that African American collegiate athletes often transferred universities because of racism, lack of resources for personal development, isolation, and racial assaults. Likewise, Mexican-American collegiate athletes faced challenges with their primary challenge involving a perceived lack of opportunity (Romo, 2011). In addition to race and culture, gender also contributes to challenges faced by female collegiate athletes (Cooper & Hawkins, 2014). The following section will review wellness and challenges faced by female athletes.
Wellness of Female Collegiate Athletes

Almost half of the 482,000 collegiate athletes competing in the NCAA are women (Irick, 2015). During the last 40 years, women have advanced in collegiate sports and are performing at an increasingly high level (Shaffer & Wittes, 2006). Although female collegiate athletes are flourishing in competition, their holistic wellness is not thriving (LaFountaine, 2007). Researchers have found that female collegiate athletes are more susceptible than male athletes to depression, anxiety, substance abuse, and eating disorders (Brunet, 2010; Haupt, 1993; Hudd et al., 2000).

In the general population, women are twice as likely as men to suffer from depression (NIMH, 2011). Storch, Killiany, and Roberti (2005), found that female collegiate athletes experience levels of “depressive symptoms, social anxiety, and non-support” (p. 94) that are higher than that of their male counterparts and non-athlete peers. Therefore, female athletes may be more prone to mental health problems, which could have an effect on the way they experience sports.

Brunet (2010) found higher incidence of eating disorders among female collegiate athletes than male athletes, while more recent study indicate this is not the case (McLester, Hardin, & Hoppe, 2014). According to Brunet (2010), eating disorders affect more women than any other population group. High levels of stress experienced by female athletes raise concern over eating disorders in this population. Additionally, female athletes are more likely than male student-athletes to have lower self-esteem (Brunet, 2010) and to abuse substances for the purpose of losing weight (Brunet, 2010; Haupt, 1993). Female collegiate athletes’ concerns about improving performance and physical appearance may lead to increased participation in unhealthy behaviors such as self-induced vomiting, taking laxatives and using diet pills (Haupt, 1993).
In a more recent study, very few female collegiate athletes reported struggling with poor body image or eating disorders, and many reported high levels of self-esteem (McLester et al., 2014). According to McLester et al., “few female athletes were defined as susceptible to eating disorders, which may be explained by the relationship between body image satisfaction and self-esteem” (2014, p.409).

In two studies, LaFountaine (2007; 2009) found that female collegiate athletes scored the lowest on the subscales related to stress management and nutrition on the FFWEL. In addition, 63.8% of female college students reported having stress often, while only 36.3% of male students in the same study reported having stress often (Hudd, Dumlao, Erdmann-Sager, Murray, Phan, Soukas, & Yokozuka, 2000). Therefore, stress management seems to be an area that female collegiate athletes may warrant improvement.

**Factors that Enhance or Diminish Wellness**

McAllister, Motamedi, Hame, Shapiro, et al. (2001) found injury had a major impact on all areas of wellness. McAllister and colleagues (2001) assessed 562 student-athletes and found that the athletes with the lowest instances of injury were the ones with the highest perceived levels of wellness. High levels of stress, in all individuals, can have a negative effect on health, injury, and resilience (Hudd et al, 2000).

Resilience is a crucial skill for athletes to be successful (Morgan, Fletcher, & Sakar, 2013). According to Morgan et al. (2013), team resilience is “a dynamic, psychosocial process which protects a group of individuals from the potential negative effect of the stressors they collectively encounter” (p. 552). Resilience is essential for student athletes in order learn to cope with the stressors of academic and sports related responsibilities. For some student athletes, learning to cope with the additional stressors placed on them by their sports involvement may be
difficult (Morgan et. al., 2013). Therefore, Morgan et al., have provided evidence that collegiate athletes may benefit from stress management coping skills.

**Summary**

The literature review in this chapter explored research on wellness including wellness models and wellness assessments. Additionally, wellness literature pertaining to college students, collegiate athletes, female collegiate athletes, and wellness interventions was examined. In Chapter 3, the methodology of the study, including the design of the study, instrumentation, and data analysis procedures, will be outlined.
CHAPTER III: METHODOLOGY

Introduction

This chapter will outline the research design, research questions and hypotheses, participants, instruments, procedures, and data analyses of the study. The specific purpose of this study was to examine the impact of a wellness intervention on the personal wellness of female collegiate athletes. Myers and Sweeney’s Five Factor Wellness Inventory (FFWEL; 2005b, 2005c) and related Five Factor Wellness and Habit Change Workbook (Myers & Sweeney, 2006) was used as the basis of the wellness intervention program.

Research Design

This study utilized a quantitative research paradigm and a quasi-experimental research design. Jackson (2015) suggests that a quasi-experimental research design may be used as an intermediary between correlational research designs and true experimental research designs. Therefore a quasi-experimental design will allow for slightly stronger conclusions to be drawn than those from correlational research, thus suggesting more than a simple relationship between variables. Random assignment refers to the “equal likelihood that a participant will be assigned to the treatment, control, or comparison group” (Balkin, 2010, p.48). The comparison groups consist of a treatment group and a control group. A treatment group is the group that receives the experimental manipulation and the control group is the group that does not receive the treatment. The control group was used a baseline measure for a study (Balkin, 2010).

Furthermore, this study compared a treatment group and a control group in a posttest-
only control group design. A posttest-only control group design refers to a group of participants who are randomly assigned to either the treatment group or the control group (Heppner, Wampold, Owen, Thompson, & Wang, 2016). The treatment group receives the intervention while the control group receives no intervention. The treatment group and control group receive a posttest and neither group receives a pretest (Heppner, 2016). In this study, the treatment group participated in a 1-hour wellness workshop and the control group did not receive any treatment. The use of a random assigned control group helped provide a reliable baseline in this study. The posttest-only control group design includes the measurement of the dependent variable (i.e. female collegiate athlete wellness) after the implementation of the treatment (i.e. wellness workshop) to determine the impact of the treatment and to offer an analysis of the effect of the wellness intervention on female collegiate athlete Total Wellness. Data collection using the Five Factor Wellness Inventory (FFWEL) was administered to both the treatment and the control group two weeks after participants in the control group completed the intervention phase.

The overall purpose of the posttest-only control group design is to test the effect of the independent variable on the dependent variable (Heppner, et al., 2016). The posttest-only control group design also controls for most of the threats to internal validity. History, testing effects, maturation, instrumentation, and regression are controlled because they are expected to be equally expressed in the treatment group and control group. Additionally, the elimination of pretest sensitization is another advantage of a posttest-only control group design. The sampling design of this study will be discussed in the following section.

**Population and Sampling Design**

The participants of the study consisted of NCAA and NJCAA female collegiate athletes from four institutions in the Southeast region of the United States. Teams and participants were
selected from the institutions’ athletic rosters. The researcher recruited participants from female collegiate sports teams from different states and institution sizes to reflect diversity indicative of the overall population of female collegiate athletes in the NCAA and the NJCAA. Therefore, the results may only be generalizable to NCAA and NJCAA female collegiate athletes at institutions in the Southeast region of the United States.

Participants were recruited through a telephone call that was made to the teams’ coaches. The initial call to the coaches included a brief overview of the study, and the researcher answered questions regarding athlete participation. The researcher also contacted the institutions’ compliance officer by telephone to receive permission to engage their athletes in research. The script used for the telephone conversations is included in Appendix A. The participants were randomly assigned to either the treatment or the control group. Before the treatment began, the researcher used a random number generator to randomly assign half of the participants to the treatment group and the other half to the control group. The researcher then informed the coach which numbers were selected for the treatment (wellness intervention) and the coach directly informed those athletes stating that their next stage in the researcher process was the wellness workshop. The rest of this study’s procedure is addressed in the Procedures section of this chapter.

**Research Questions and Hypotheses**

The research questions and associated hypotheses addressed in this study are identified below.

**Research Question 1 (RQ1):** Do female collegiate athletes who have participated in a counseling-based second-order factor wellness workshop have higher levels of *Total Wellness* than those female athletes who have not participated in a wellness workshop?
**H₀₁**: There will be no significant difference in the levels of *Total Wellness* of female athletes who have participated in a second-order factor wellness workshop when compared to female athletes who have not participated in a wellness workshop.

**Research Question 2 (RQ2)**: Is there a difference in the levels of wellness between the female athletes who participated in a wellness workshop when compared to the female athletes who have not participated in a wellness workshop on any of the subscale scores of the wellness instrument?

**H₀₂**: There is no difference on any of the subscale scores when the female athletes who have participated in a wellness workshop are compared to the female athletes who have not participated in a wellness workshop.

**Research Question 3 (RQ3)**: Do female collegiate athletes who have current or past sports related injuries have lower levels of *Total Wellness* than those female athletes who do not have or have had any sports related injuries?

**H₀₃**: There will be no significant difference in the levels of *Total Wellness* of female athletes who have current or past sports related injuries when compared to female athletes who do not have or had any sports related injuries.

**Instrument Selection and Developments**

The study utilized characteristic items generated by the researcher and a wellness measurement (i.e. Five Factor Wellness Inventory) (Myers & Sweeney, 2005c).

**Characteristic Component of the Questionnaire**

The characteristic questionnaire asked participants about their sport team affiliation, season, scholarship status, and history of injuries. A copy of the characteristic questionnaire can
be found in Appendix B. The questionnaire acquired characteristic information that was used to address Research Question 3.

**Five Factor Wellness Inventory Component of the Questionnaire**

The Five Factor Wellness Inventory developed by Myers and Sweeney (2005b, 2005c) is a 91-item self-report instrument based on the Indivisible Self Wellness Model (IS-WEL) (Myers & Sweeney, 2004). The responses are recorded on a 4-point Likert-type scale that consists of the following possible responses: *strongly agree, agree, disagree, and strongly disagree*. The instrument measures holistic personal wellness and produces a *Total Wellness* score. The *Total Wellness* score includes 73 items that is comprised of 5 factors and 17 secondary sub-factors: the *Creative Self* (*control, emotions, positive humor, thinking, work*), the *Coping Self* (*leisure, realistic beliefs, self-worth, stress management*), the *Essential Self* (*cultural identity, gender identity, self-care, spirituality*), the *Physical Self* (*nutrition and exercise*), and the *Social Self* (*friendship and love*) (Myers et al., 2004; Myers & Sweeney, 2005a, 2005b). In addition, sixteen items on the instrument are contextual variables that influence wellness. These variables consist of *chronometrical contexts* (effect of choices over the lifespan), *global contexts* (effect of world events), *institutional contexts* (effect of politics and law), and *local contexts* (safety) (Myers et. al., 2004; Myers & Sweeney, 2005b, 2005c). Two independent items on the instrument measure life satisfaction and instrument validity (Myers et al., 2004; Myers & Sweeney, 2005b, 2005c).

There are three current versions of the FFWEL: the adult version, the teen version, and the elementary version. The adult version (FFWEL-A) has a maximum 9th grade reading level. The Teen version (FFWEL-T) has a maximum 6th grade reading level and the Elementary version (FFWEL-E) has a 3rd grade reading level (Myers & Sweeney, 2005d). The most used
version within research is the Adult version (FFWEL-A), which was updated in 2014 to the FFWEL-A2. The FFWEL- A was revised to:

Alter item #19 on the adult form, from the Self-Care scale, which read ‘I use a seat belt when riding in a car’ and changed to ‘I regularly get enough sleep.’ The change was made because the item on seat belt use is no longer discriminating of higher wellness as seat belt use is not mandated by law throughout the U.S… (Myers & Sweeney, 2006, p.2).

The average time to complete each of the three versions is between 10 and 20 minutes (Myers & Sweeney, 2006). The instructions on all the versions are written at a fifth grade reading level. Because the FFWEL-E is designed for 7-10 year olds, Myers and Sweeney (2006) recommend verbal administration for young children. The FFWEL-A2 and FFWEL-T are designed for self-assessment. This study utilized the FFWEL-A2 version because the female athletes were 18 years of age or older.

**Scoring.** The FFWEL is scored based on 4-point Likert scale. Most items, except for the items on the realistic beliefs subscales and one item on the self-care subscale, are worded positively and are scored with 1 being strongly disagree and 4 being strongly agree. In contrast, the items on the realistic beliefs subscale and one item on the self-care subscale are reversed scored with 4 being strongly disagree and 1 being strongly agree. Raw scores on all scales are converted to a standard score ranging from 25 to 100 with higher scores representing greater wellness. The raw scores are converted by dividing the mean score by the number of items for that scale and multiplied by 25. In addition, the score for Total Wellness is determined by calculating the mean of all the items on the assessment (Myers & Sweeney, 2006). Overall,
higher Total Wellness scores suggest higher levels of personal wellness and lower Total Wellness scores indicate lower levels of personal wellness (Myers et. al, 2004).

**Reliability and validity.** The norming sample for the FFWEL consisted of 3,043 individuals who completed the Wellness Evaluation of Lifestyle (WEL) and the reliability analysis focused on the 73 items contributing to the Total Wellness score (Hattie, Myers, and Sweeney, 2004). The sample consisted of 54% adult males and 46% adult females and 80% of the participants identified themselves as Caucasian, 9.1% African American, with the remaining 10.9% consisting of other ethnic minorities (Hattie et al., 2004). The alpha coefficients for the five second-order factors were reported as: the Creative Self .93, the Coping Self .92, the Essential Self .91, the Physical Self .90, and the Social Self .94 (Hattie et al., 2004).

After the development of the FFWEL, another study that was conducted over a five-year span, which produced a new data base (Myers & Sweeney 2005b). The sample consisted of 2,093 individuals, which included 52% males and 48% female. All individuals were over the age of eighteen. Chronbach’s Alpha coefficients for the FFWEL were reported as: Total Wellness .98, the Creative Self .96, the Coping Self .89, the Essential Self .95, the Physical Self .90, and the Social Self .96 (Myers & Sweeney 2005b). These values suggest that there is strong evidence supporting its reliability.

Myers and Sweeney (2005b) reported evidence of convergent and divergent validity related to academic self-concept, body image, ethnic identity, gender roles, life satisfaction, mattering, moral identity, self-esteem, and social interest. Hattie et al. (2004) studied the construct validity of the FFWEL based on a comparison of it to similar measures. Hattie et al. (2004) found higher correlations between similar wellness constructs and lower correlations
between different constructs, which suggests that the FFWEL has adequate construct validity as a measure of personal holistic wellness.

A brief consistency check for scores on the FFWEL was done using three items that assess perceived wellness. The item with the highest correlation (.38), which stated “I am satisfied with my life” was added to the inventory to assess self-perceptions in relation to Total Wellness (Myers & Sweeney, 2005c).

**Workshop Module Development**

The wellness workshop intervention was developed based on the Five Factor Wellness and Habit Change Workbook (Myers & Sweeney, 2006), which is a supplement to the FFWEL inventory. The content from the workbook was adapted to create a module of instruction for this study. The workbook was “designed to help you examine your own wellness in multiple areas and develop a personal wellness plan to enhance your wellness” (Myers & Sweeney, 2006, p. 4). Because this workbook was designed for individual use, the researcher modified the selected content into a form appropriate for psychoeducational use with a group (treatment group). The workbook contains information of the following areas: The Indivisible Self model, assessing and examining wellness, readiness for change, and a guide for a personal wellness plan. The workbook addresses all 5 factors of wellness. Because this treatment intervention focused specifically on the *Coping Self* factor, workbook content related to the *Coping Self* factor of wellness was modified into a PowerPoint presentation, worksheets, and an application activity. After the draft of the full module was complete, it was sent to a panel of experts for review and feedback. Allowing for the panel of experts to review the module and suggest changes minimized threats to internal validity. Using the feedback from the panel, the researcher finalized
the module for use the participants in this study. The module development structure of the study is illustrated in Figure 3.
Figure 3. Module development structure.

The Five Factor and Habit Change Workbook (Myers & Sweeney, 2006)

Selection of Content from Workbook

Development of Presentation

Development of Worksheets

Development of Activity

Draft of Full Module

Panel Review

Final Module Modification

Stage 2 Treatment Intervention using Final Module

Data Collection

Data Analysis

Interpretation of Results
**Procedures**

Following approval by the researcher’s dissertation committee, the researcher obtained approval to conduct the study from the Institutional Review Board (IRB) at the University of Mississippi. The application included consent forms and research materials. A copy of the IRB approval letter is provided in Appendix C.

**Data Collection**

This study consisted of three stages: 1) recruitment and assignment to treatment or control groups, 2) a wellness intervention for members of the treatment group; and 3) administration and scoring of a posttest to members of the treatment and control groups. The three stages of the study are illustrated in Figure 4.

**Figure 4.** The three stages of the study

![Diagram of three stages](attachment:image.png)

Stage 1
- Recruitment
- Informed Consent
- Assignment to treatment or control group

Stage 2
- Wellness Intervention for Treatment Group
- Possible Implementation of Wellness Plan

Stage 3
- Demographic Questionnaire
- FFWEL Posttest
- Scoring of Posttest

After the coaches agreed to have their athletes participate in the study, the researcher called the coaches to schedule a date and time to meet with all of the participants. During stage 1 of the study, the athletes that agreed to participate were assigned a number that replaced their identifying information throughout the study to maintain anonymity of their data. The participants also signed the informed consent and returned it to the researcher. All athletes
received a copy of the informed consent for their documentation. A copy of the informed consent can be found in Appendix D and a copy of the Workshop Agenda can be found in Appendix E.

At this point, the researcher used a random number generator to randomly assign half of the participants to the treatment group and the other half to the control group. The researcher then informed the coach which numbers were selected for the treatment (wellness intervention) and the coach directly informed those athletes stating that their next stage in the researcher process was the wellness workshop. This blind process should have reduced the risk of the John Henry effect (Stuart-Hamilton, 2007). The John Henry effect occurs when participants in a control group act or perform unnaturally if they are aware that they are a part of a baseline group. This concluded stage 1 of the study.

On the day of the wellness workshop (stage 2), participants who were randomly assigned to the treatment group came to the designated workshop room. The workshop was a one-hour workshop conducted by the researcher and was based on the Five Factor Wellness (FFWEL) and Habit Change Workbook (Myers & Sweeney, 2006). The workbook is a supplement to the FFWEL inventory. During the workshop, the researcher defined wellness and briefly educated participants about the Indivisible Self Model of Wellness (IS-WEL). The researcher then briefly educated the participants about one second-order factor: the Coping Self. This second-order factor consists of four third-order factors: leisure, realistic beliefs, self-worth, and stress management. The participants were then advised to devise an individual wellness plan focused on the Coping Self. They were encouraged to utilize these plans in their life. A copy of workshop agenda can be found in Appendix E. This concluded stage 2 of the study.

Two weeks after the completion of stage 2, the researcher had the coaches email all the participants (in the treatment and control groups) and instructed them come to the designated
meeting area for the third stage of the study. During stage three, the researcher administered the characteristics questionnaire and the FFWEL to all participants. The characteristics questionnaire and the FFWEL were coded with the participants’ number they received during state 1; therefore the participants’ responses remained anonymous. When finished completing the assessments, the participants placed their assessments in an envelope and it was sealed. This concluded the participants’ commitment to the study. The assessments will remain in a secure location until one year following completion of the study and will then be destroyed.

Although risks were not anticipated, participants were monitored throughout the study for adverse effects of participation. Minimal risks may include participants becoming aware of stressors that may impact their overall wellness or possible stigma about participating in a workshop with individuals with whom they may or may not be associated in other areas of their life. None of the participants exhibited or reported such responses, although if they would have, they would have been referred to the counseling center on their campus, where services are free of charge. Participants were able to withdraw from the study at any time. Only the data from participants who completed all stages of the study (i.e. informed consent, intervention/no intervention, and posttest) were analyzed.

Data Analysis

Data from the characteristic form and the FFWEL were entered into individual data sheets and then entered into the Statistical Software for the Social Sciences (SPSS) for analysis. Prior to testing the hypotheses, descriptive statistics were computed on all study variables for quantitative data. Measures of central tendency (i.e. mean, median, and mode), frequency distribution, and dispersion (i.e. standard deviation, skewness, kurtosis) were calculated.
Additionally, estimates of instrument reliability and additional evidence of construct validity were produced.

**Hypothesis Testing**

The hypotheses will be restated in this section and the statistical method that was used to analyze each research question will be provided.

**H₀₁**: There will be no significant difference in the levels of Total Wellness of female athletes who have participated in a second-order factor wellness workshop when compared to female athletes who have not participated in a wellness workshop.

**Statistical analysis**: This hypothesis was tested using an independent samples t-test analysis of the means of the posttest scores on the Five Factor Wellness Inventory (FFWEL) for the treatment and control groups. The level of significance for the analysis was set at $p < .05$.

**H₀₂**: There is no difference on any of the subscale scores when the female athletes who have participated in a wellness workshop are compared to the female athletes who have not participated in a wellness workshop.

**Statistical Analysis**: This hypothesis was tested by comparing the means of the posttest scores of each of the subscale scores for the treatment and control groups using independent samples t-test analysis on every subscale. The level of significance for all the analyses was set at $p < .05$.

**H₀₃**: There will be no significant difference in the levels of Total Wellness of female athletes who have current or past sports related injuries when compared to female athletes who do not have or had any sports related injuries.

**Statistical analysis**: This hypothesis was tested using an independent samples t-test analysis of the means of the posttest scores on the Five Factor Wellness Inventory (FFWEL) for
the current/past injuries group and the no injuries group of participants. The level of significance for the analysis was set at $p < .05$.

**Summary**

This chapter described the methodology that was used to test the research hypotheses. This study utilized a quasi-experimental, posttest-only research design to determine the effect of a second factor wellness intervention has on female collegiate athletes. Participants were randomly assigned to the treatment group or the control group. The treatment group participated in the wellness workshop, and then two weeks later, participants in both the treatment and control group were administered the FFWEL posttest. All the data analyzed used descriptive statistics and $t$-tests.

The first three chapters have provided an introduction to the study, the purpose and significance of the study, review of the literature on wellness models and wellness interventions among athletes, and a description of the methodology that was applied. The remaining two chapters will discuss and analyze the statistical results.
CHAPTER IV: RESULTS

Introduction

The purpose of this study was to determine whether a counseling-based second-order factor wellness intervention had an effect on the personal wellness scores of female collegiate athletes. The results and findings of this quasi-experimental, post-test only control group study are presented in this chapter. The results and findings are organized using the following headings: descriptive statistics, psychometric analysis, and inferential statistics for each research question.

Descriptive Statistics

The participants for this study were female collegiate athletes who were a part of a college team in the United States during the 2017 fall semester. For this study, four coaches agreed to distribute information regarding participation in the workshop to their athletes. The data collection phase of this study consisted of three stages: 1) recruitment and assignment to treatment or control groups, 2) a workshop, conducted by the researcher, for participants of the treatment group; and 3) administration (paper/pencil) of the Five Factor Wellness Inventory (FFWEL) to participants of the treatment and control groups.

Initially, 71 athletes across the four programs agreed to participate. From this initial pool, five participants were eliminated from the sample either because of missing assessment data or the participant’s early withdrawal from the study. Table 5 reveals that of the 66 remaining participants, 27.3% (n=18) played soccer, 33.3% (n=22) played volleyball, 27.3% (n=18) played
softball, and 12.1% (n=8) played basketball. Regarding sport season, of the 66 participants, 60.6% (n=40) participants were in season, none (n=0) were off season and not training, and 39.4% (n=26) were off season and still training with their team. In regard to scholarship status, none (n=0) of the participants were on full scholarship, 33.3% (n=22) of the participants were on partial scholarship, and 66.7% (n=44) did not have a scholarship. Of the 66 participants, 19.7% (n=13) reported an existing injury that kept them from participating or training in their sport, 72.7% (n=48) reported having experienced a previous injury that prevented them from participating in their sport, and 27.3% (n=18) reported no current or past injury that affected their participation.

Female student athletes on four teams distributed across three colleges/universities in two southeastern states were represented in the study. In addition, to best represent the entire population of college athletes, the participants for the study were from both NCAA team rosters and NJCAA team rosters and represented different divisions (division I, II, III). Of the 66 participants, 72.7% (n=48) attended a four-year college or university and 27.3% (n=18) attended a two-year college. In addition, 66.7% (n=44) of the participants reported that they attended a state college or university while 33.3% (n=22) of participants reported that they attended a private college or university. A summary of participant characteristics is presented in Table 5.
Table 5

Participant Characteristics

<table>
<thead>
<tr>
<th>Participant Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
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<td><strong>Sport</strong></td>
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<td></td>
</tr>
<tr>
<td>Basketball</td>
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<td>12.1</td>
</tr>
<tr>
<td>Soccer</td>
<td>18</td>
<td>27.3</td>
</tr>
<tr>
<td>Softball</td>
<td>18</td>
<td>27.3</td>
</tr>
<tr>
<td>Volleyball</td>
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<td>33.3</td>
</tr>
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<td></td>
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<tr>
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<td>0.0</td>
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<td>Off - Training</td>
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<td><strong>Scholarship</strong></td>
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<td>None</td>
<td>44</td>
<td>66.7</td>
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<td>Partial</td>
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<td>33.3</td>
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<td>Full</td>
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<td>0.0</td>
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<td><strong>Injury</strong></td>
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<td></td>
</tr>
<tr>
<td>Current</td>
<td>13</td>
<td>19.7</td>
</tr>
<tr>
<td>Past</td>
<td>48</td>
<td>72.7</td>
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<tr>
<td>Never</td>
<td>18</td>
<td>27.3</td>
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<td>2-year/NJCAA/Division I</td>
<td>18</td>
<td>27.3</td>
</tr>
<tr>
<td>4-year/NCAA</td>
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<td>72.7</td>
</tr>
<tr>
<td>Division II</td>
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<td>39.4</td>
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<td>33.3</td>
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<td>State university/college</td>
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<td>66.7</td>
</tr>
<tr>
<td>Private university/college</td>
<td>22</td>
<td>33.3</td>
</tr>
</tbody>
</table>

*Note. n=66*

The FFWEL was used to measure the *Total Wellness* of female collegiate athletes. The descriptive statistics, which included the mean (M), standard deviation (SD), skewness, and kurtosis values, were computed for selected variables collected via the instrument used in the study. Examining the means and standard deviations for each of the FFWEL subscales identified the average scores and dispersion of the scores. Additionally, the skewness and kurtosis of each factor assessed the symmetry relative to a normal distribution.

Each participant responded to each item of the FFWEL on a scale of 1 (strongly disagree) to 4 (strongly agree). The mean, standard deviation, skewness, and kurtosis for each factor can be found in Table 6.
Table 6

Descriptive Statistics for Participants Five Factor Wellness Inventory Posttest Scores

<table>
<thead>
<tr>
<th>Factor/subscale</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
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</thead>
<tbody>
<tr>
<td>Coping Self</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workshop</td>
<td>35</td>
<td>76.47</td>
<td>7.10</td>
<td>-.137</td>
<td>-1.00</td>
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<td>31</td>
<td>70.63</td>
<td>6.66</td>
<td>.207</td>
<td>-.732</td>
</tr>
<tr>
<td>Leisure</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Workshop</td>
<td>35</td>
<td>81.43</td>
<td>8.60</td>
<td>-.257</td>
<td>-.973</td>
</tr>
<tr>
<td>Control group</td>
<td>31</td>
<td>76.21</td>
<td>11.03</td>
<td>.516</td>
<td>-.315</td>
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<td>Realistic beliefs</td>
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<td></td>
</tr>
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<td>60.27</td>
<td>11.52</td>
<td>.439</td>
<td>1.34</td>
</tr>
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<td>7.85</td>
<td>.315</td>
<td>-.999</td>
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<td>11.07</td>
<td>-.205</td>
<td>-1.51</td>
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<td>10.94</td>
<td>.025</td>
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<td>77.68</td>
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<td>6.19</td>
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<td>Control group</td>
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<tr>
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<td>20.16</td>
<td>-0.540</td>
<td>-1.186</td>
<td>31</td>
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</tbody>
</table>

*Note.* Workshop= treatment group; Control group= no workshop prior to FFWEL.

As shown in Table 6, the *realistic beliefs* third-order factor subscale had the lowest mean for both the treatment group, M=60.27 (SD=11.52) and the control group, M=56.29 (SD=7.85).

The *love* third-order factor subscale had the highest mean for both the treatment group, M=94.46 (SD=7.69) and the control group, M=92.94 (SD=11.03). The *love* subscale was also highly skewed to the right indicating that the majority of the participants’ wellness scores in *love* were already high and remained high for both the treatment and control group. In addition, the *exercise* third-order factor subscale was also highly skewed to the right indicating that the majority of the participants’ wellness scores in *exercise* were already high. This finding appears to support the idea that athletes are subjected to intense physical training schedules, which require high levels of regular exercise. These intense physical training schedules require student athletes to cope with additional stressors in comparison to their nonathletic counterparts (Watson & Kissinger, 2007).
The *Coping Self* second-order factor analysis produced the largest mean difference (5.84 points) between the treatment, M=76.47 and the control, M=70.63 groups. The *Social Self* second-order factor subscale had the smallest mean difference (2.41 points) between the treatment, M=93.04 and the control, M=90.63 groups. The descriptive statistics for participant FFWEL factor scale scores are presented in Table 6.

**Psychometric Analysis**

Cronbach’s Alpha is an estimate of the internal consistency associated with the scores that can be derived from a scale. In the absence of reliability, it is impossible for a scale to have validity (Creswell, 2015). Reliability estimates were obtained for each second-order subscale and for the full FFWEL using the Cronbach’s Alpha. The Cronbach’s Alpha reliability estimates for the full FFWEL (*Total Wellness*) were \( \alpha =0.72 \) (control group) and \( \alpha =0.81 \) (treatment group). Given that an alpha coefficient level of 0.70 and above is considered acceptable (Creswell, 2015), the full FFWEL has an acceptable degree of internal consistency. With regard to the subscales of the FFWEL, the alpha coefficients that were acceptable for the control group were the *Coping Self* (\( \alpha =0.78 \)) and the *Social Self* (\( \alpha =0.93 \)). Therefore, the *Coping Self* and the *Social Self* alphas were found to be highly reliable, indicating a high level of internal consistency for both subscales. The subscale alpha coefficients that were not considered acceptable, for the control group, were the *Creative Self* (\( \alpha =0.59 \)), the *Essential Self* (\( \alpha =0.60 \)), and the *Physical Self* (\( \alpha =0.63 \)). For the treatment group, four of the subscale alpha coefficients were acceptable (*Coping Self*, \( \alpha =0.84 \); *Creative Self*, \( \alpha =0.74 \); *Physical Self*, \( \alpha =0.71 \); *Social Self*, \( \alpha =0.93 \)) and one alpha coefficient was not considered acceptable (*Essential Self*, \( \alpha =0.66 \)). Therefore, the *Coping Self*, the *Creative Self*, the *Physical Self*, and the *Social Self* alphas were found to be highly reliable, indicating a high level of internal consistency for the four subscales. Furthermore, the
subscale alpha coefficients were higher for the treatment group when compared to the control group. The treatment group being exposed to wellness content before taking the assessment may have contributed to the higher subscale alpha coefficients of the FFWEL for the treatment group when compared to the control group. The Cronbach’s Alpha reliability coefficients for the FFWEL (Total Wellness) and its subscales are presented in Table 7.

Table 7

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Control Group α</th>
<th>Treatment Group α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping Self</td>
<td>0.78</td>
<td>0.84</td>
</tr>
<tr>
<td>Creative Self</td>
<td>0.59</td>
<td>0.74</td>
</tr>
<tr>
<td>Essential Self</td>
<td>0.60</td>
<td>0.66</td>
</tr>
<tr>
<td>Physical Self</td>
<td>0.63</td>
<td>0.71</td>
</tr>
<tr>
<td>Social Self</td>
<td>0.93</td>
<td>0.93</td>
</tr>
<tr>
<td>Total Wellness</td>
<td>0.72</td>
<td>0.81</td>
</tr>
</tbody>
</table>

*Note. n=31 for Control group; n=35 for Treatment group*

The higher treatment group internal consistency estimates may be attributable to learning that occurred during the treatment. It appears that the relatively small sample (n=66) may also have contributed to lower internal consistency estimates for both groups.

**Inferential Statistics**

Three research questions were addressed by this study. This section presents the results of the analyses addressing the hypotheses corresponding to each of these research questions.

**Research question 1.** The first research question was, “Do female collegiate athletes who have participated in a counseling-based second-order factor wellness workshop have higher levels of Total Wellness as measured by the Five Factor Wellness Inventory (FFWEL) than those female athletes who have not participated in a wellness workshop?” The null hypothesis stated that there would be no significant difference in the levels of Total Wellness of female athletes who have participated in a second-order factor wellness workshop when compared to female
athletes who have not participated in a wellness workshop. Computation of the descriptive statistics for the control group yielded a mean of 77.98 and a standard deviation of 4.08 and for the treatment group a mean of 81.93 with and a standard deviation of 4.35, thus revealing higher scores on the FFWEL associated with completion of the workshop. The descriptive statistics for participant FFWEL Total Wellness (treatment and control) scores is presented in Table 8.

Table 8

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Wellness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment group</td>
<td>35</td>
<td>81.93</td>
<td>4.35</td>
<td>.119</td>
<td>-.310</td>
</tr>
<tr>
<td>Control group</td>
<td>31</td>
<td>77.98</td>
<td>4.08</td>
<td>.483</td>
<td>-.199</td>
</tr>
</tbody>
</table>

To test the null hypothesis and determine whether this observed difference was statistically significant, the collected data were analyzed using an independent samples t-test. The t-test involves a comparison of the means of the scores on the FFWEL for the treatment and control groups. The level of significance for this test was set at $p < .05$.

In this study, the dependent variable was participants’ FFWEL Total Wellness scores and the independent variable was the presence or absence of the wellness intervention. The result from SPSS of the Levene’s test for equality of variances was not significant ($F=.018, p =.894$), which indicates that equal variances could be assumed for the two means. The statistical output for the independent samples $t$-test for Total Wellness is presented in Table 9. The findings indicate there was a statistically significant difference in the Total Wellness mean scores for the treatment group ($M = 81.93, SD = 4.35$) when compared to the control group ($M = 77.98, SD = 4.08$) conditions; $t(64)= 3.79, p = 0.001$. 
Table 9

Independent Samples t-test Results for Total Wellness

<table>
<thead>
<tr>
<th></th>
<th>Levene’s Test for Equality of Variance</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Total Wellness</td>
<td>.018</td>
<td>.894</td>
</tr>
</tbody>
</table>

Note. $p=.05$

Based on the results of the analysis, the null hypothesis was rejected. In addition, the effect size, Cohen’s $d=0.937$, was large. These findings indicate that participation in the second-order factor wellness intervention resulted in significantly higher Total Wellness scores on the FFWEL for the female student athletes when compared to the scores of those female student athletes who did not participate in the intervention.

Research question 2. The second research question was, “Is there a difference in the levels of wellness between the female athletes who participated in a wellness workshop when compared to the female athletes who have not participated in a wellness workshop on any of the subscale scores of the wellness instrument? The null hypothesis stated that there would be no significant difference on any of the subscale scores when the female athletes who have participated in a wellness workshop are compared to the female athletes who have not participated in a wellness workshop.

To test this hypothesis, the data collected were analyzed using an independent samples $t$-test, which involves a comparison of the means of the scores on each of the subscales of the FFWEL for the treatment and control groups. The level of significance for this test was set at $p < .05$. The five factors of wellness from the Indivisible Self Model of Wellness are the Coping Self, the Creative Self, the Essential Self, the Physical Self, and the Social Self (Myers & Sweeney, 2005a). The independent samples $t$-test allowed for the comparison of the mean scores on each
of the five subscales of the FFWEL for both the treatment and control groups. The results for each subscale are presented in Tables 10-14 with accompanying narrative findings below.

**Coping self.** For the *Coping Self* subscale, the result of the Levene’s test for equality of variances was not significant (F=.395, p=.532), which allows equal variances to be assumed for the two means. Furthermore, the findings of the independent samples *t*-test can be found in Table 10 and suggest there was a statistically significant difference in the *Coping Self* subscale scores for the treatment group (M = 76.47, SD = 7.10) when compared to the control group (M = 70.63, SD = 6.66) conditions; *t*(64)= 3.43, *p*= 0.001. In addition, the effect size, Cohen’s d=0.848, was large. These findings indicate that participation in the second-order factor wellness intervention resulted in a significantly higher *Coping Self* subscale score.

The *Coping Self* consists of the following third-order factors: leisure, realistic beliefs, self-worth, and stress management. The results of the independent samples *t*-test provided in Table 10 resulted in the rejection of the null hypothesis and revealed there was a statistically significant difference between the participants in the treatment group when compared to the participants in the control group on the leisure (*t*(64)= 2.16, *p*= 0.035), self-worth (*t*(64)= 3.09, *p*= 0.003), and stress management (*t*(56)= 2.70, *p*= 0.009) third-order factors. The realistic beliefs subscale with a *t* value of 1.66 and a *p* = 0.103 resulted in a failure to reject the null hypothesis. This indicates that there was not significant difference between the means of the treatment and control groups.
Table 10

Independent Samples t-test Results for Coping Self and Third-Order Subscales

<table>
<thead>
<tr>
<th>Second Order Third Order</th>
<th>Levene’s Test for Equality of Variance</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Coping Self</td>
<td>.395</td>
<td>.532</td>
</tr>
<tr>
<td>Leisure</td>
<td>1.912</td>
<td>.172</td>
</tr>
<tr>
<td>Realistic beliefs</td>
<td>.601</td>
<td>.441</td>
</tr>
<tr>
<td>Self-worth</td>
<td>1.028</td>
<td>.315</td>
</tr>
<tr>
<td>Stress management</td>
<td>7.260</td>
<td>.009</td>
</tr>
</tbody>
</table>

*Note. p=.05*

These findings indicate that participation in the second-order factor wellness intervention resulted in significantly increased participant leisure, self-worth, and stress management subscale scores. Although analysis for the realistic beliefs subscale score was not significant, a p value of .1 suggests that it is relatively close to the threshold of significance. A larger sample size may result in a finding of significance for this factor as well.

**Creative self.** For the Creative Self subscale, the result of the Levene’s test for equality of variances was not significant (F= 1.592, p=.212), which allows equal variances to be assumed for the two means. Additionally, the findings of the independent samples t-test can be found in Table 11 and resulted in the rejection of the null hypothesis. This reveals that there was a statistically significant difference in the Creative Self subscale scores for the treatment group (M = 79.62, SD = 6.19) and the control group (M = 74.83, SD = 5.38) conditions; t(64)= 3.35, p= 0.001. In addition, the effect size, Cohen’s d=0.822, was large. These findings indicate that participation in the second-order factor wellness intervention significantly improved participants’ Creative Self subscale scores.

The Creative Self consists of the following third-order factors: control, emotions, positive humor, thinking, and work. The results of the independent samples t-test provided in Table 11 resulted in a rejection of the null hypothesis which revealed there was a statistically significant
difference between the means of participants in the treatment group when compared to the participants in the control group on the emotions ($t(64)= 3.82, p= 0.001$) and work ($t(64)= 3.92, p= 0.001$) third-order factors. The control subscale with a $t$ value of 1.18 and a $p=.243$, the positive humor subscale with a $t$ value of -.336 and a $p=.738$, and the thinking subscale with a $t$ value of .968 and a $p=.337$ failed to achieve a value that would reject the null hypothesis. This suggests that there was no significant difference in the mean scores of the treatment and control groups for those two subscales.

Table 11

Independent Samples $t$-test Results for Creative Self and Third-Order Subscales

<table>
<thead>
<tr>
<th>Second Order</th>
<th>Third Order</th>
<th>Levene’s Test for Equality of Variance</th>
<th>$t$-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$F$</td>
<td>Sig.</td>
</tr>
<tr>
<td>Creative Self</td>
<td>Control</td>
<td>1.592</td>
<td>.212</td>
</tr>
<tr>
<td></td>
<td>Emotions</td>
<td>.112</td>
<td>.739</td>
</tr>
<tr>
<td></td>
<td>Positive Humor</td>
<td>.152</td>
<td>.698</td>
</tr>
<tr>
<td></td>
<td>Thinking</td>
<td>.066</td>
<td>.798</td>
</tr>
<tr>
<td></td>
<td>Work</td>
<td>.049</td>
<td>.825</td>
</tr>
</tbody>
</table>

Note. $p=.05$

These findings indicate that participation in the second-order factor wellness intervention significantly influenced participants’ emotions and work third-order factor scores. However, the analysis revealed that the control, positive humor, and thinking factor mean scores were not significantly different.

**Essential self.** For the Essential Self subscale, the result of the Levene’s test for equality of variances was not significant ($F=1.217, p=.274$), which allows equal variances to be assumed for the two means. Furthermore, the findings of the independent samples $t$-test can be found in Table 12 and resulted in the failure to reject the null hypothesis. This suggests there was a not a significant difference in the Essential Self subscale scores for the treatment group ($M = 84.73$, $SD = 8.61$) and the control group ($M = 80.99$, $SD = 8.01$) conditions; $t(64)= 1.82, p= 0.074$. In
addition, the effect size, Cohen’s $d=0.450$, was medium. These findings indicate that participation in the second-order factor wellness intervention did not significantly influence participants’ Essential Self subscale scores. Although, a $p$ value of .074 for the Essential Self subscale suggests that it is relatively close to being significant. A larger sample size may result in significance for this factor.

The Essential Self consists of the following third-order factors: cultural identity, gender identity, self-care, and spirituality. The results of the independent samples $t$-test are provided in Table 12 and reveal that the null hypothesis was rejected. This indicates that there was a statistically significant difference between the participants in the treatment group when compared to the participants in the control group only on the self-care ($t(54)= 2.10, p= 0.041$) third-order factor. The cultural identity subscale with a $t$ value of .959 and a $p=.341$, the gender identity subscale with a $t$ value of .073 and a $p=.942$, and the spirituality subscale with a $t$ value of 1.18 and a $p=.243$ resulted in the failure to reject the null hypothesis and did not achieve the threshold of significance.

Table 12

Independent Samples t-test Results for Essential Self and Third-Order Subscales

<table>
<thead>
<tr>
<th>Second Order Third Order</th>
<th>Levene’s Test for Equality of Variance</th>
<th>$t$-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F$</td>
<td>Sig.</td>
</tr>
<tr>
<td>Essential Self</td>
<td>1.22</td>
<td>.274</td>
</tr>
<tr>
<td>Cultural Identity</td>
<td>3.40</td>
<td>.070</td>
</tr>
<tr>
<td>Gender Identity</td>
<td>.088</td>
<td>.767</td>
</tr>
<tr>
<td>Self-care</td>
<td>5.92</td>
<td>.018</td>
</tr>
<tr>
<td>Spirituality</td>
<td>2.50</td>
<td>.118</td>
</tr>
</tbody>
</table>

*Note. $p=.05*

These findings indicate that participation in the second-order factor wellness intervention resulted in significantly increased participants’ self-care subscale scores. However, analysis for the cultural identity, gender identity, and spirituality subscale scores were not significant.
**Physical Self.** For the *Physical Self* subscale, the result of the Levene’s test for equality of variances was not significant (F=.032, p=.858), which allows equal variances to be assumed for the two means. Additionally, the findings of the independent samples *t*-test can be found in Table 13 and resulted in the rejection of the null hypothesis. This indicates that there was a statistically significant difference in the *Physical Self* subscale scores for the treatment group (M = 84.57, SD = 8.01) and the control group (M = 80.65, SD = 6.80) conditions; *t*(64)= 2.13, *p*= 0.037. In addition, the effect size, Cohen’s *d*=0.528, was medium. These findings indicate that participation in the second-order factor wellness intervention significantly influenced participants’ *Physical Self* subscale scores.

The *Physical Self* consists of the following third-order factors: *exercise* and *nutrition*. The results of the independent samples *t*-test are provided in Table 13 and reveal that the null hypothesis was rejected. This indicates that there was a statistically significant difference between the participants in the treatment group when compared to the participants in the control group on the *nutrition* (*t*(64)= 2.27, *p*= 0.027) third-order factor. However, the *exercise* factor had a *t* value of 1.18 and a *p*=.244, resulting in failure to reject the null hypothesis as the differences on this third order factor did not achieve the threshold of significance.

Table 13

*Independent Samples t-test Results for Physical Self and Third-Order Subscales*

<table>
<thead>
<tr>
<th>Second Order</th>
<th>Third Order</th>
<th>Levene’s Test for Equality of Variance</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><em>F</em></td>
<td><em>Sig.</em></td>
</tr>
<tr>
<td>Physical Self</td>
<td></td>
<td>.032</td>
<td>.858</td>
</tr>
<tr>
<td>Exercise</td>
<td></td>
<td>.700</td>
<td>.406</td>
</tr>
<tr>
<td>Nutrition</td>
<td></td>
<td>.386</td>
<td>.537</td>
</tr>
</tbody>
</table>

*Note. p=.05*
These findings indicate that participation in the second-order factor wellness intervention significantly increased participants’ nutrition subscale scores. However, the analysis for one of the two factors (the exercise subscale) score was not significant.

**Social self.** For the Social Self subscale, the result of the Levene’s test for equality of variances was not significant (F=.882, p=.351), which allows equal variances to be assumed for the two means. Furthermore, the findings of the independent samples t-test can be found in Table 14 and reveal that the there was a failure to reject the null hypothesis. This suggests that there was a not a significant difference in the Social Self subscale scores for the treatment group (M = 93.04, SD = 7.51) and the control group (M = 90.63, SD = 9.30) conditions; t(64)= 1.16, p= 0.249. In addition, the effect size, Cohen’s d=0.285, was small. These findings indicate that participation in the second-order factor wellness intervention did not significantly influence participants’ Social Self subscale scores.

The Social Self consists of the following third-order factors: friendship and love. The results of the independent samples t-test are provided in Table 14 and reveal that the there was a failure to reject the null hypothesis. This suggests that there was not a significant difference between the participants in the treatment group when compared to the participants in the control group on the friendship (t(64)= 1.37, p= 0.175) or love (t(64)= 0.64, p= 0.524) third-order factors. These findings indicate that participation in the second-order factor wellness intervention did not significantly influence participants’ friendship or love third-order subscale scores.
Table 14

Independent Samples $t$-test Results for Physical Self and Third-Order Subscales

<table>
<thead>
<tr>
<th>Second Order</th>
<th>Third Order</th>
<th>Levene’s Test for Equality of Variance</th>
<th>$t$-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>$F$</td>
</tr>
<tr>
<td>Social Self</td>
<td></td>
<td></td>
<td>.882</td>
</tr>
<tr>
<td>Friendship</td>
<td></td>
<td></td>
<td>.568</td>
</tr>
<tr>
<td>Love</td>
<td></td>
<td></td>
<td>4.118</td>
</tr>
</tbody>
</table>

*Note. $p$.05*

A summary of the results for Research Question 2 are presented in Table 15.

Table 15

Summary of the Results for Research Question 2

<table>
<thead>
<tr>
<th>Second Order</th>
<th></th>
<th>$t$-test for Equality of Means</th>
<th>Significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$t$</td>
<td>$df$</td>
</tr>
<tr>
<td>Coping Self</td>
<td></td>
<td>3.43</td>
<td>64</td>
</tr>
<tr>
<td>Leisure</td>
<td></td>
<td>2.16</td>
<td>64</td>
</tr>
<tr>
<td>Realistic beliefs</td>
<td></td>
<td>1.66</td>
<td>60</td>
</tr>
<tr>
<td>Self-worth</td>
<td></td>
<td>3.09</td>
<td>64</td>
</tr>
<tr>
<td>Stress management</td>
<td></td>
<td>2.74</td>
<td>64</td>
</tr>
<tr>
<td>Creative Self</td>
<td></td>
<td>3.34</td>
<td>64</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>1.18</td>
<td>64</td>
</tr>
<tr>
<td>Emotions</td>
<td></td>
<td>3.82</td>
<td>64</td>
</tr>
<tr>
<td>Positive Humor</td>
<td></td>
<td>-.336</td>
<td>64</td>
</tr>
<tr>
<td>Thinking</td>
<td></td>
<td>.968</td>
<td>64</td>
</tr>
<tr>
<td>Work</td>
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<td>3.92</td>
<td>64</td>
</tr>
<tr>
<td>Essential Self</td>
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<td>1.82</td>
<td>64</td>
</tr>
<tr>
<td>Cultural Identity</td>
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<td>.959</td>
<td>64</td>
</tr>
<tr>
<td>Gender Identity</td>
<td></td>
<td>.073</td>
<td>64</td>
</tr>
<tr>
<td>Self-care</td>
<td></td>
<td>2.14</td>
<td>54</td>
</tr>
<tr>
<td>Spirituality</td>
<td></td>
<td>1.18</td>
<td>64</td>
</tr>
<tr>
<td>Physical Self</td>
<td></td>
<td>2.13</td>
<td>64</td>
</tr>
<tr>
<td>Exercise</td>
<td></td>
<td>1.18</td>
<td>64</td>
</tr>
<tr>
<td>Nutrition</td>
<td></td>
<td>2.27</td>
<td>64</td>
</tr>
<tr>
<td>Social Self</td>
<td></td>
<td>1.16</td>
<td>64</td>
</tr>
<tr>
<td>Friendship</td>
<td></td>
<td>1.37</td>
<td>64</td>
</tr>
<tr>
<td>Love</td>
<td></td>
<td>.642</td>
<td>53</td>
</tr>
</tbody>
</table>

*Note. Bold = significant*

Overall, in terms of the second order factors, the analysis of the participant scores resulted in the rejection of the null hypotheses for the *Coping Self*, the *Creative Self*, and the *Physical Self* second-order subscales but a failure to reject the null hypotheses for the *Essential*
Self and the Social Self subscales. Therefore, participants who participated in the second-order factor wellness workshop had significantly higher mean levels of wellness on the Coping Self, the Creative Self, and the Physical Self subscales than the participants who were in the control group. The participants who participated in the workshop did not have significantly higher mean levels of wellness on the Essential Self and Social Self second-order subscales than the participants who were in the control group.

Research Question 3. The second research question was, “Do female collegiate athletes who have current or past sports related injuries have lower levels of Total Wellness than those female athletes who do not have or have had any sports related injuries?” The null hypothesis stated that there would be no significant difference in the levels of Total Wellness, of female athletes who have current or past sports related injuries when compared to female athletes who do not have or had any sports related injuries, as measured by the FFWEL.

To address this research question, the data collected were analyzed using an independent samples t-test, which consisted of an analysis of the means of the Total Wellness scores on each of the subscales on the FFWEL for the participants who had current or past injuries and the participants who did not have or had not had any sports related injuries. The level of significance for this test was set at $p < .05$. The descriptive statistics for Total Wellness scores of participants’ injuries are presented in Table 16.

Table 16

Descriptive Statistics for Participant FFWEL Total Wellness Scores for Injuries and No Injuries

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Wellness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Injuries</td>
<td>18</td>
<td>80.08</td>
<td>4.63</td>
<td>.514</td>
<td>.745</td>
</tr>
<tr>
<td>Injuries</td>
<td>48</td>
<td>80.07</td>
<td>4.69</td>
<td>.180</td>
<td>-.721</td>
</tr>
</tbody>
</table>

Note. *No injuries means participant has never had/currently does not have an injury that prohibits her from playing her sport/*Injuries means participant has/has had an injury that prohibits her from playing her sport.
For the Total Wellness of the FFWEL, the result of the Levene’s test for equality of variances was not significant (F=.257, p=.614), which allows equal variances to be assumed for the two means. Descriptive statistics of the Total Wellness scores for the participants who did not have or had not had any sports related injuries was M= 80.08 (SD=4.63) and for the participants who had current or past injuries was M=80.07 (SD=4.69).

Additionally, as shown in Table 17, the independent samples t-test failed to reject the null hypothesis. This suggests that there was not a significant difference in the Total Wellness scores for the participants who reported never having had an injury (M= 80.08, SD=4.63) and the participants who reported currently being injured or suffering a past injury (M=80.07, SD=4.69) conditions; t(64)= .008, p = 0.994.

Table 17
Findings for the Independent Samples t-test for Total Wellness Scores of Participants’ Injuries and No Injuries

<table>
<thead>
<tr>
<th></th>
<th>Levene’s Test for Equality of Variance</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Total Wellness</td>
<td>.257</td>
<td>.614</td>
</tr>
</tbody>
</table>

Note. p=.05

In addition, the effect size, Cohen’s d=0.002, was small. These findings indicate that the female student athletes in this study who reported never having had an injury did not have higher levels of Total Wellness on the FFWEL when compared to the female student athletes in this study who reported currently being injured or suffering a past injury.

**Summary**

This study was completed to determine whether a counseling-based second-order factor wellness intervention had an effect on the personal wellness scores of female collegiate athletes.
The findings indicate that the female collegiate athletes who participated in a counseling-based second-order factor wellness workshop reported significantly higher levels of Total Wellness on the full FFWEL than those female athletes who did not participate in the wellness workshop.

However, not all the second-order factors on the FFWEL produced significant results. The female athletes who participated in the wellness workshop reported significantly higher levels of wellness in the second-order subscales of the Coping Self, the Creative Self, and the Physical Self than the athletes who did not participate in the wellness workshop. In contrast, the female athletes who participated in the wellness workshop did not report significantly higher levels of wellness in the second-order factors of the Essential Self and the Social Self than the athletes who did not participate in the wellness workshop.

Similarly, the workshop resulted in significantly higher levels of wellness for some but not all of the third-order factors. The female athletes who participated in the wellness workshop reported significantly higher levels of wellness in the third-order factors of leisure, self-worth, stress management, emotions, work, self-care, and nutrition than the athletes who did not participate in the wellness workshop. However, the female athletes who participated in the wellness workshop did not report significantly higher levels of wellness in the third-order factors of realistic beliefs, control, positive humor, thinking, culture identity, gender identity, spirituality, exercise, friendship, and love than the athletes who did not participate in the wellness workshop. The hypothesis test results and interpretation for Total Wellness, second-order factors and third-order factors are presented in Table 18.
<table>
<thead>
<tr>
<th>Factor/subscale</th>
<th>Hypothesis Test Results</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping Self</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Leisure</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Realistic beliefs</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Self-worth</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Stress management</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Creative Self</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Control</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Emotions</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Positive Humor</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Thinking</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Work</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Essential Self</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Cultural Identity</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Gender Identity</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Self-care</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Spirituality</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Physical Self</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Exercise</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Nutrition</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Social Self</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td></td>
<td>Result</td>
<td>Outcome</td>
</tr>
<tr>
<td>-------</td>
<td>--------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Friendship</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Love</td>
<td>Failed to reject null</td>
<td>Treatment does not result in significantly higher scores than the control.</td>
</tr>
<tr>
<td>Total Wellness</td>
<td>Reject null</td>
<td>Treatment results in significantly higher scores than the control.</td>
</tr>
</tbody>
</table>

In regard to the third research question, there was not a difference between *Total Wellness* scores on the full FFWEL for female athletes who reported never having had an injury and those female athletes who reported currently being injured or suffering a past injury. Chapter V discusses the implications of the results, identifies the limitations of the study, and provides suggestions for future research.
CHAPTER V: DISCUSSION

Introduction

The purpose of this study was to determine whether a counseling-based second-order factor wellness intervention had an effect on the personal wellness scores of female collegiate athletes as measured by the Five Factor Wellness Inventory (FFWEL). In addition to managing many of the same personal and academic concerns as other students, collegiate athletes must manage additional unique challenges associated with their athletic participation (Broughton & Neyer, 2001). Oftentimes, the weight of these additional challenges manifest as physical, emotional, social, spiritual, or developmental wellness difficulties for these athletes (Watson & Kissinger, 2007). The methods utilized by this quasi-experimental study examined whether the second-order factor intervention had a positive impact on the personal wellness scores of a sample consisting of 66 female athletes from three colleges/universities representing four sports. The participants in this post-test only control group design study were randomly assigned to the treatment and control groups by sport. This chapter will present a discussion of the results, limitations, implications of the study, and suggestions for future research.

Discussion of Results

The treatment intervention for this study specifically addressed the Coping Self second-order factor. The Coping Self was chosen because previous research pertaining to the wellness of athletes revealed low levels in the Coping Self factor (Brunet, 2010; LaFountaine, 2007; 2009;

In this study, when compared to the other four second-order factors (Creative Self, Essential Self, Physical Self, and Social Self), the Coping Self subscale scores had the largest mean difference (5.84 points) between the treatment and the control groups. Furthermore, the results of the independent samples t-test indicated there was a statistically significant increase in the Coping Self subscale scores for the treatment group when compared to the control group. The t-test results, coupled with a relatively large effect size, provided strong evidence that the wellness workshop had a significant positive impact on the Coping Self subscale score.

Although the Coping Self subscale had the largest mean difference, indicating that the wellness intervention had the largest impact on Coping Self factor, it also is important to note that this subscale score mean was the lowest of the five second-order factors, suggesting relatively low levels of wellness in this dimension. These results parallel those reported by Watson and Kissinger (2007) comparing the wellness levels of college athletes and non-athletes, in which the Coping Self mean was found to be the lowest second-order factor mean. In addition, both this current study and the study by Watson and Kissinger (2007) found the realistic beliefs subscale (a component of the Coping Self) to have the lowest third-order subscale mean for college athletes. Thus, although the results of this study indicate that the workshop had the most positive effect on the student athletes’ Coping Self subscale mean score, it also indicates that even after participation in the workshop, the athletes’ Coping Self still had the lowest mean score when compared to the other second-order subscale mean scores. Based on the analyses, one can conclude that the workshop was effective and helped the student athletes increase their realistic beliefs, stress management, self-worth, and leisure levels of wellness as measured by the
FFWEL. In addition, these results suggest that female collegiate athletes continue to struggle the most coping with the balancing of behavioral and psychological responses to life events.

Previous studies also reported that the other third-order factors of the Coping Self (stress management, self-worth, and leisure) play a vital role in student athletes’ wellness levels. In two studies, LaFountaine (2007; 2009) found that female collegiate athletes scored lowest on the FFWEL on the stress management subscale, which is a third-order factor of the Coping Self. In addition, 63.8% of female non-athlete students reported having stress often, while only 36.3% of male non-athlete students in the same study reported having stress often (Hudd, Dumlao, Erdmann-Sager, Murray, Phan, Soukas, & Yokozuka, 2000). Furthermore, female athletes appear more likely than male student-athletes to have lower self-esteem (Brunet, 2010).

This study found that participation in the second-order factor wellness intervention significantly increased participants’ leisure, self-worth, and stress management subscale scores. These three third-order factor subscales had some of the largest mean differences between the treatment and control group. This indicates that the workshop had a positive impact on these three third-order factors, which is important because previous studies (Brunet, 2010; LaFountaine, 2007; 2009), found that the leisure, self-worth, and stress management factors play a vital role in student athletes’ wellness levels. However, even though the realistic beliefs mean score was slightly larger for the athletes who participated in the workshop when compared to the athletes in the control group, the workshop did not have a significant positive impact on the realistic beliefs third-order factor.

Watson and Kissinger (2007) found that collegiate athletes achieved their highest scores in the Social Self subscale. Similarly, the participants in both the treatment and control groups for this current study attained the highest mean scores on the Social Self second-order factor.
subscale. In addition, the Social Self subscale had the smallest mean difference (2.41) between the treatment and the control group means. Thus, although the results of this study indicate that the workshop had the least positive effect on the student athletes’ Social Self second-order factor subscale mean score, it also indicates that even after participation in the workshop, the athletes’ Social Self still had the highest mean score when compared to the other second-order factor mean scores. Based on the analysis, one can conclude that the workshop was not an effective intervention for helping student athletes increase their already high Social Self levels of wellness as measured by the FFWEL.

However, Watson and Kissinger (2007) also found that, when compared to non-athletes, the athletes had significantly lower wellness scores in social wellness. Similarly, other studies have suggested that athletes experience social isolation outside of their sport because of their time constraints and busy schedules (Ford, 2007; Harris, Altekruse, & Engels, 2003; Stone & Strange, 2000). Because this study did not compare athletes with non-athletes, it is unclear how the Social Self wellness of its participants would compare with other college students. In addition, the results of this study cannot determine if female collegiate athletes are struggling with social isolation outside if their sport. However, the results indicate that the female collegiate athletes perceive their Social Self levels of wellness to be higher than their other second-order factor subscale levels of wellness as measured by the FFWEL.

Findings in this study also revealed that the participants had higher wellness scores for the exercise third-order factor subscale than for the majority of the other third-order factors. The exercise third-order subscale mean scores were 94.29 for the treatment group and 92.50 for the control group. Although exercise had one of the highest mean scores for both the treatment and control groups, it has had one of the smallest mean differences between groups with a mean
difference of only 1.79 points which was not significant at the .05 level. However, this is not surprising given that athletes are subjected to intense physical training schedules with little room for increase in this particular domain. These findings are consistent with those of Watson and Kissinger (2007), who found that Exercise was the only factor that had a higher level of wellness for college athletes when compared to their non-athletic counterparts.

Pertaining to Total Wellness, the first research question assessed whether female athletes who participated in a second-order factor wellness intervention would have higher levels of Total Wellness on the FFWEL than the female athletes who did not participate in the intervention. The results of the independent samples t-test indicated that athletes who participated in the second-order factor wellness intervention achieved significantly higher Total Wellness scores on the FFWEL than the female student athletes who did not participate in the intervention.

These results are consistent with past research findings, which suggested that wellness seminars and courses significantly increase participants’ levels of wellness as measured by the FFWEL (Lockwood, & Wohl, 2012; McCormick & Lockwood, 2006; Robbins, Powers, & Rushton, 1992; Stalnaker-Shofner & Manyam, 2014). However, the seminars and courses in those studies had not been conducted with athletes and the seminars/courses used in these previous studies were time consuming, with some being the length of a college semester (15 weeks). This study’s demonstration of the efficacy of brief wellness interventions with collegiate athletes therefore represents a contribution to the literature.

A limitation of the previous studies involving time-consuming interventions was a high attrition rate. For example, the wellness seminar study conducted by Stalnaker-Shofner and Manyam (2014) reported an attrition rate of almost half (46%) of the original group of participants. Stalnaker-Shofner and Manyam’s (2014) population consisted of graduate students
and the researchers attributed the attrition to the inability to commit to the full participation in the wellness seminar. For collegiate athletes, two of their largest stressors are lack of time and additional obligations (Beauchemin, 2014). Additional obligations can include practices, games, travel, and team events. These obligations can lead to minimal time in the athlete’s schedule for other activities, which likely causes distress. In light of athletes’ constricted schedules, this study utilized a condensed, brief intervention in an effort to reduce the high attrition rates found in previous studies. Specifically, this study utilized a one-hour wellness workshop in an attempt to address the wellness needs of female collegiate athletes. The attrition rate for this study was relatively small (7%). Therefore, the low attrition rate may indicate that the workshop was condensed enough to fit into the female collegiate athletes constricted schedules.

To summarize, the findings related to the first research question are important because they indicate that the second-order factor workshop was an effective intervention for increasing female student athletes’ Total Wellness levels. They also demonstrate effectiveness of even a brief intervention, with results more reliable due to the study’s low attrition rate.

Beyond the first research question’s examination of the impact of the wellness intervention on Total Wellness, the second research question explored the impact of the wellness intervention on each specific second- and third-order factor wellness subscale scores. More specifically, the second research question investigated whether there was a difference in any of the subscale scores of the FFWEL between the female athletes who participated in the workshop and the female athletes who did not participate in the workshop. The findings revealed that the treatment group of athletes, who participated in the second-order wellness workshop, had significantly higher mean levels of wellness than the control group of ton the Coping Self, the Creative Self, and the Physical Self second-order factors but not on the Essential Self and Social
Self second-order factors. In addition, the female athletes who participated in the Coping Self wellness workshop had significantly higher levels of wellness than the athletes who did not participate in the wellness workshop in the third-order factors of leisure, self-worth, stress management, emotions, work, self-care, and nutrition. Therefore, participation in the Coping Self wellness workshop produced a significant increase in the levels of wellness in three of the second-order subscale scores and seven of the third-order factor subscale scores of the FFWEL.

Myers and Sweeney (2005c) recommended only focusing on one or two wellness areas at a time when treating clients within the counseling setting. They contended that treating and implementing a wellness plan that focuses on one or two areas will impact other wellness factors and positively impact an individuals’ Total Wellness. This current study’s findings that a wellness intervention focused on only one wellness area (Coping Self) also resulted in improved wellness on other wellness areas (Creative Self and Physical Self) as well as on Total Wellness are important because they support Myers and Sweeney’s (2005c) contention.

The third research question addressed whether the female athletes who had current or past sports related injuries had lower levels of Total Wellness than the female athletes who did not have or had not had any sports related injuries. The results related to this research question are important because they provided insight on the relationship between physical injuries and overall wellness. The results of this study indicated that there was no significant difference in Total Wellness on the FFWEL between female student athletes with and without current or past injuries. The means of the two groups were almost identical. The group with no injuries had a mean of 80.08 and the group with current or past injuries had a mean of 80.07. This result is not consistent with other studies pertaining to injury and wellness. McAllister, Motamedi, Hame, Shapiro, et al. (2001) found that an injury had a major impact on all areas of wellness. McAllister
and colleagues (2001) assessed 562 student-athletes and found that the athletes with the fewest instances of injury were the ones with the highest perceived levels of wellness. The difference in results could be because the sample size of the two groups (injuries and no injuries) was not similar. The female athletes with no current or past injuries consisted of a sample size of 18, while the female athletes with current or past injuries had a sample size of 48. If the sample sizes were more balanced, the independent samples t-test may have produced different results.

Implications for Practice

The findings of this study may be utilized to better inform collegiate coaches, athletic staff, and college counselors as they work with female collegiate athletes. Coaches, athletic staff, and counselors can use the results of this study to address the wellness needs of female collegiate athletes. Continuing education seminars for coaches and athletic staff should be available and should provide the coaches and athletic staff with information on specific areas of female athlete wellness and how wellness impacts the athletic performance and the academic performance of the female athlete. Usually, collegiate athletes are reluctant to seek help from college counseling services and instead they tend to seek help from coaches and teammates (Brewer, Van Raalte, Petipas, Bachman, & Weinhold, 1998; Selby, Weinstein, & Bird, 1990). However, the educational training of most coaches and teammates do not include any professional counseling experience, which could be a disservice to the female athlete (Etzel, Pinkney, & Hinkle, 1994). Therefore, coaches may benefit from additional wellness education in order to help their athletes through the collegiate athlete experience.

An additional implication for practice might be to have the college counseling center work directly with the athletic department, coaches, and athletes. It would be beneficial to have counselors who are familiar with wellness and the unique challenges associated with female
collegiate athletes. More specifically, it would be ideal to have counselors who are experienced in realistic beliefs and stress management interventions for female athletes. Therefore, another implication for practice might be to incorporate brief wellness workshops periodically throughout the year. Coaches or the counseling department can facilitate these brief workshops, depending on the familiarity of wellness and the complexities female collegiate athletes experience.

Another implication for counselors is that the results of this study support focusing on one or two areas of wellness when treatment planning for athletes. The findings of this study provided empirical support Myers and Sweeney’s (2005c) contention that treating and implementing a wellness plan that focused on one or two areas would impact other wellness factors and positively impact an individual’s Total Wellness. In addition, the results of this study suggest that many female collegiate athletes could benefit from counseling interventions focused on realistic beliefs and stress management.

In addition, the findings of this study can benefit female collegiate athletes by helping them better understand wellness and the possible impact it could have on their athletic performance and academic success. Sport becomes a stressor in many ways because of performance pressure, constant evaluation, and the overall investment in the sport (Lazarus, 2000). These stressors can negatively impact the wellness levels of female athletes. In this study, stress management had one of the lowest mean scores for female collegiate athletes. Therefore, female athletes should be knowledgeable regarding the results of this and similar studies. Such knowledge should help motivate female collegiate athletes to seek out brief stress management interventions to increase their wellness levels and thereby improve their athletic and academic performance.
Limitations

There are limitations that exist within this study. The sample size (n=66) should be considered when interpreting the results. Compared to the over 200,000 female athletes who annually compete in the NCAA (Irick, 2015), the participation rate in this study was low. However, efforts were made to recruit an array of female collegiate athletes, and the participants were randomly assigned to the treatment and control groups by sport.

Another limitation in this study is that the three colleges/universities represented in this study were from the Southeast region of the United States. Therefore, the Northeast, West, and Midwest regions were not represented in this sample. In addition, only four team-based sports (basketball, softball, soccer, and volleyball) were represented in this study. Thus, there are many female collegiate sports that were not represented in this sample and no male sports were represented.

Other limitations of this study involve the treatment intervention. First, the workshop was facilitated on three different days because the teams were in different locations. Therefore, there is a possibility that the researcher conducted the workshops slightly different from one another. To help minimize this, the researcher followed a well developed and thought out workshop design. In addition, the researcher wore the same outfit to all three of the workshops she conducted to limit as many inconsistences as possible between the workshops. Also, although the workshop had a component where the athletes developed a personal wellness plan, the researcher did not verify whether the athletes implemented the plan. Finally, the researcher did not follow up after the administration of the FFWEL to determine whether the effects of the workshop persisted over time.
As in the Myers et al. (2003) and Myers and Bechtel (2004) studies, the data analyses for the second research question in this study consisted of 22 independent t-tests. A limitation of this approach is that this increases the likelihood of a Type I error. As such, future researchers may wish to utilize a Bonferroni adjustment.

A final limitation is that the FFWEL used in this study was a self-report assessment that measured perceptions of wellness. Self-report measures can be problematic because of response bias, specifically social-desirability bias. Social-desirability bias is when participants may exaggerate or underreport their answers to be viewed in a better light (Rosenman, Tennekoon, & Hill, 2011). This bias possibly along with other types of self-report bias may impact the accuracy of the results.

To summarize, the primary limitations of this study involve the size and representativeness of the sample, the reliance of this study on self-reported wellness, and the brief nature of the intervention. These limitations may be addressed in future research.

**Recommendations for Future Research**

Directly related to the limitations of this study, recommendations for future research include expanding as well as replicating this study in other settings to achieve a larger sample size and a more diverse sample of sports. It is recommended that future researchers target a sample that is not located just in the Southeast region of the United States but a sample that includes all regions of the US. Participants in future studies should include those participating in female sports beyond soccer, softball, basketball, and volleyball. In addition, future studies should examine the effect the workshop has on female athletes in non-team related sports. Additionally, future studies could engage in longitudinal research to study how long the effects
of brief wellness-focused interventions last. This study was short in duration and was not able to determine how lasting the effects of the intervention were for the female collegiate athletes.

Another research recommendation would be to modify the workshop to focus on the factors on which the participants in this study reported the lowest levels of wellness. In this study, participants had the lowest scores on the three third-order subscales of realistic beliefs, nutrition, and stress management.

The results of this study indicated that there was not a significant difference in the Total Wellness scores on the full FFWEL for female athletes who reported never having had an injury and those female athletes who reported currently being injured or suffering a past injury. These results were not congruent with previous studies (Hudd et al, 2000; McAllister, et al., 2001). Because of the inconsistency of this study’s results with other studies, future research is needed to further explore the relationship between injuries and a full spectrum of wellness factors as measured by the FFWEL.

**Summary**

Although prior research has examined the wellness of collegiate athletes and the efficacy of time-consuming wellness seminars with the college population, there was a lack of research examining the best practices regarding brief interventions to help female collegiate athletes improve their wellness. Therefore, the purpose of this study was to determine whether a brief counseling-based second-order factor wellness intervention would have an effect on the personal wellness scores of female collegiate athletes.

This study found that the female collegiate athletes who participated in a counseling-based second-order factor wellness workshop reported significantly higher levels of Total Wellness on the full FFWEL than those female athletes who did not participate in the wellness
workshop. Specifically, the female athletes who participated in the *Coping Self* wellness workshop had significantly higher mean levels of wellness on the *Coping Self*, the *Creative Self*, and the *Physical Self* subscales than the female athletes who were in the control group. The female athletes who participated in the workshop did not have significantly higher mean levels of wellness on the *Essential Self* and *Social Self* second-order subscales than the female athletes who were in the control group.

This study did not identify a significant difference in *Total Wellness* scores on the full FFWEL between female athletes who reported never having had an injury and those female athletes who reported currently being injured or suffering a past injury. However, the majority of participants in this study reported currently being injured or suffering a past injury. Therefore, due to the inequality of the sample sizes, interpretation of the results should be made with caution.

Overall, coaches, athletic staff, and counselors should be familiar with the wellness needs of female collegiate athletes and with strategies for addressing these needs. Brief wellness workshops, specifically emphasizing realistic beliefs and stress management, would be beneficial for the well-being of female collegiate athletes.


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APPENDICES
APPENDIX A: PHONE SCRIPT FOR COACHES
Phone Script for Coaches

Dear Coach --,

My name is Mindy Dunagan and I am a doctoral student at the University of Mississippi. Dr. Megan Buning recommended you and your team to me. I am completing a research project examining the wellness of counseling students as part of the requirements of a Doctorate of Philosophy in Leadership and Counselor Education at the University of Mississippi. I am contacting you to see if you would be willing to have your team participate in a brief wellness workshop that I will be conducting as a part of my dissertation.

I am conducting my dissertation research on improving wellness and performance of female collegiate athletes and need your team’s help to improve wellness and performance of athletes (including yours)! I would come to your team to conduct the workshop and it would be no longer than an hour. I would be flexible and schedule the workshop for whatever day and time works best for the team. The workshop is educational but interesting and will cover the topics of stress-management, self-worth, realistic beliefs, and leisure. It will also promote the balancing of behavioral and psychological responses to life events, which in turn help with sport performance. Research has shown that higher levels of athlete wellness will improve overall team wellness and performance. With your team participating in this short workshop, my goal is to improve your athletes’ wellness and overall improving team performance and stress.

The athletes will be randomly assigned to either two or three stages of the study. The first stage is the consent form and the random assignment. All athletes will participate in stage one. Next, I will randomly assign athletes, who consented to participate, to either be a part of stage two or not be a part of stage two. Stage two is the wellness workshop. With your help, I will have you email those athletes that were randomly assigned to the wellness workshop. I will then conduct the wellness workshop to those assigned athletes. Two weeks later, stage three will take place. During stage three, all of the athletes complete a wellness assessment. I will come back and provide the athletes with a paper form of the assessment. The assessment takes 10-15 minutes to complete. I understand the strict and busy schedule student athletes endure. Therefore I will keep the workshop as brief but effective as possible. Again, I will schedule the workshop and assessment for whatever day/time works best for your team.

Do you have any questions about the research?

If you agree to allow your team to participate, actual participation is completely voluntary on an individual basis and the athlete can choose to drop out at any time. Would you be willing to have your team participate?

Great, thank you for your time Coach----. I will be in contact with you again confirming the date at time a few weeks before the scheduled workshop.

If you happen to have any more questions or concerns you are welcome to contact me directly at this number, or even email me at mdunagan@go.olemiss.edu. You may also contact Dr. Suzanne Dugger, my dissertation committee chair, at (662) 915-8821, or smdugger@olemiss.edu. Thank
you again for your consideration of my request.
APPENDIX B: CHARACTERISTIC QUESTIONNAIRE
Characteristic Questionnaire

Study-Issued ID Number: _________________

Instructions: Please answer the questions and statements below by circling the response which most applies to your characteristic information.

1. Collegiate Sport Affiliation: Soccer Softball Basketball Volleyball

2. Sport Season: In-Season Off-Season Off-Season but still training with team

3. Scholarship Status: Full Scholarship Partial Scholarship None

4. Are you currently injured and unable to perform in your sport? Yes____ No____

5. Have you ever been injured and unable to perform in your sport? Yes____ No____
**Office of Research and Sponsored Programs**

9/22/2017

Ms. Dunagan  
Leadership and Counselor Education  

Dr. Dugger  
Leadership and Counselor Education

<table>
<thead>
<tr>
<th>IRB Protocol #:</th>
<th>18-015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Study:</td>
<td>The Effect of a Second-Order Factor Wellness Intervention on the Total Wellness of Female Collegiate Athletes</td>
</tr>
<tr>
<td>Approval Date:</td>
<td>09-22-17</td>
</tr>
<tr>
<td>Expiration Date:</td>
<td>09-21-18</td>
</tr>
</tbody>
</table>

**Dear Ms. Dunagan:**

This is to inform you that your application to conduct research with human participants has been reviewed by the Institutional Review Board (IRB) at The University of Mississippi and approved as Expedited under 45 CFR 46.110, category 7.

Research investigators must protect the rights and welfare of human research participants and comply with all applicable provisions of The University of Mississippi’s Federalwide Assurance 00008602. Your obligations, by law and by University policy, include:

- Research must be conducted exactly as specified in the protocol that was approved by the IRB.
- Changes to the protocol or its related consent document must be approved by the IRB prior to implementation except where necessary to eliminate apparent immediate hazards to participants.
- Only the approved, stamped consent form may be used throughout the duration of this research unless otherwise approved by the IRB.
- A copy of the IRB-approved informed consent document must be provided to each participant at the time of consent, unless the IRB has specifically waived this requirement.
- Adverse events and/or any other unanticipated problems involving risks to participants or others must be reported promptly to the IRB.
- Signed consent documents and other records related to the research must be retained in a secure location for at least three years after completion of the research.
- Submission and approval of the Progress Report must occur before continuing your study beyond the expiration date above.
- The IRB protocol number and the study title should be included in any electronic or written correspondence.

If you have any questions, please feel free to contact the IRB at (662) 915-7482 or irb@olemiss.edu.

Sincerely,

Jennifer Caldwell, Ph.D., CPIA, CIP  
Senior Research Compliance Specialist
INFORMED CONSENT

Consent to Participate in Research

Study Title: A Wellness Intervention on the Total Wellness of Female Collegiate Athletes

Investigator
Mindy Dunagan
Department of Leadership and Counselor Education
Guyton Hall
University of Mississippi
University, MS 38677
(662) 915-7069
mdunagan@go.olemiss.edu

Faculty Sponsor
Suzanne Dugger, Ph.D.
Department of Leadership and Counselor Education
147 Guyton Hall
University of Mississippi
University, MS 38677
(662) 915-8821
smdugger@olemiss.edu

☐ By checking this box I certify that I am 18 years of age or older.

The purpose of this study

The purpose of this study is to better understand the wellness of female collegiate athletes and the factors that influence their level or wellness.

What you will do for this study

If you choose to participate in this study, you will be asked to complete a wellness inventory and participate in a wellness workshop.

- The wellness inventory asks you about different areas of your personal wellness.
- The wellness workshop is a psycho-educational workshop. It will consist of an educational presentation and activities.

Time required for this study

The informed consent (stage 1) of the study will take about 10 minutes. The wellness workshop (stage 2) will take about one hour. The assessment (stage 3) will take approximately 10-15 minutes. The total time for the study is about 1 hour 25 minutes.

Possible risks from your participation

Minimal risks may include you becoming aware of stressors that may impact your overall wellness or possible stigma about participating in a workshop with individuals with whom you may or may not be associated in other areas of your life. There are no other anticipated risks to you, except for a breach of confidentiality, which we are minimizing with the steps described below.
Benefits from your participation

Participating in this study may provide you with the balancing of behavioral and psychological responses to life events, which in turn help with sport performance. Research has shown that higher levels of athlete wellness will improve overall team wellness and performance. If you participate in this study, my goal is to improve your wellness and overall improve your teams’ performance and stress.

Confidentiality

All information in the study will be collected anonymously: it will not be possible to associate your name with your responses. You will be provided a number that will protect your identity and the researcher will only have access to your randomly assigned number and not any of your personal data.

Alternative Treatments

There are alternatives to this wellness workshop to gain higher levels of wellness. These generally consist of group and individual based counseling sessions. Treatment outside of the study is available on campus at your Counseling Center. The Counseling Center’s number can be found on your university’s website.

Right to Withdraw

Participation in this study is voluntary. If you choose not to participate or if you choose to withdrawal from this study at any time, there will be no penalty.

IRB Approval

This study has been reviewed by The University of Mississippi’s Institutional Review Board (IRB). The IRB has determined that this study fulfills the human research subject protections obligations required by state and federal law and University policies. If you have any questions, concerns, or reports regarding your rights as a participant of research, please contact the IRB at (662) 915-7482.

Please ask the researcher if there is anything that is not clear or if you need more information. When all your questions have been answered, you can decide if you want to be in the study or not.

Statement of Consent

I have read the above information. I have been given a copy of this form. I have had an opportunity to ask questions, and I have received answers. I consent to participate in the study.

Signature                                             Date
APPENDIX E: WORKSHOP AGENDA
# Workshop Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 – 2:05 PM</td>
<td>Researcher introduces self – Review of agenda</td>
</tr>
<tr>
<td></td>
<td>• Researcher will provide an overview of the wellness workshop, review informed consent (again), and discuss the agenda.</td>
</tr>
<tr>
<td>2:05 – 2:20 PM</td>
<td>Understanding Wellness</td>
</tr>
<tr>
<td></td>
<td>• Researcher will invite participants to share their ideas about what wellness is and what it means in their lives. Also the researcher will provide an overview of wellness and the Individual Self Model of wellness.</td>
</tr>
<tr>
<td>2:20 – 2:45 PM</td>
<td>Second-Order Wellness Factor: <em>Coping Self</em></td>
</tr>
<tr>
<td></td>
<td>• Using the FFWEL and Habit Workbook, the researcher will define and discuss the four areas of the <em>Coping Self</em> (<em>stress management; leisure; self-worth; realistic beliefs</em>). The researcher will also discuss how each area can impact wellness and how an individual can again higher levels of wellness in each of the four areas.</td>
</tr>
<tr>
<td>2:45 – 3:00 PM</td>
<td>Development of a Coping Self Wellness Plan/Implementing <em>Coping Self</em> Wellness into your Life</td>
</tr>
<tr>
<td></td>
<td>• Researcher will discuss an example of a wellness plan. Researcher will have handouts pertaining to the four areas (<em>stress management; realistic beliefs; self-esteem; leisure</em>) for all participants. Participants can take some time to devise a <em>Coping Self</em> personal wellness plan. Researcher will then discuss ways in which athletes can implement the plan they develop. Researcher will also answer any questions.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Reminder of next steps/Wellness workshop ends</td>
</tr>
</tbody>
</table>
EDUCATION:

The University of Mississippi, Oxford, MS
Doctor of Philosophy: Leadership and Counselor Education, May 2018
CACREP-accredited program
- Dissertation: The Effect of a Second-Order Factor Wellness Intervention on the Total Wellness of Female Collegiate Athletes.
- Cognate: Play Therapy
- Honors/Awards: Outstanding Doctoral Student Award -2018; Dissertation Fellowship – 2018; Chi Sigma Iota, Epsilon Mu Chapter

North Georgia College and State University, Dahlonega, GA
Master of Science: Community Counseling, May 2012
CACREP-Accredited Program
- Honors/Awards: Chi Sigma Iota, Gamma Gamma Epsilon Chapter

The University of Georgia, Athens, GA
Bachelor of Science: Psychology, May 2009
- Honors/Awards: Hope Scholarship

The University of Georgia, Athens, GA
Bachelor of Arts: Sociology, May 2009
- Honors/Awards: Hope Scholarship

Slippery Rock University, Slippery Rock, PA
Core curriculum, 2004-2006
- Deans list

LICENSE AND CERTIFICATIONS:

Licensed Professional Counselor (LPC), Georgia Composite Board #LPC010035

National Certified Counselor (NCC) #301605
Registered Play Therapist (RPT) – anticipated fall 2018

**PROFESSIONAL EXPERIENCE:**

**Graduate Teaching Experience**

- **May 2015 - May 2015**  
  COUN Expressive Arts – The University of Mississippi, Oxford, MS  
  Master’s level course

- **Jan 2015 - May 2015**  
  COUN 610 Addictions Counseling – The University of Mississippi, Oxford, MS  
  Master’s level course

- **Aug 2014 - Dec 2014**  
  COUN 621 Assessment – The University of Mississippi, Oxford, MS  
  Master’s level course

- **Aug 2014 - Dec 2014**  
  COUN 539 Introduction to Professional Counseling – The University of Mississippi, Oxford, MS  
  Master’s level course

- **Aug 2014 - Dec 2014**  
  COUN 672 Issues and Ethics in Counseling – The University of Mississippi, Oxford, MS  
  Master’s level course

- **May 2014 - Aug 2014**  
  COUN 605 Research in Counseling - The University of Mississippi, Oxford, MS  
  Master’s level course

- **May 2014 - Aug 2014**  
  COUN 605 Research in Counseling – The University of Mississippi – Tupelo, Tupelo, MS  
  Master’s level course

- **Aug 2013 - Dec 2013**  
  COUN 690 Counseling Skills – The University of Mississippi, Oxford, MS  
  Master’s level course

- **November 2011**  
  North Georgia College and State University, Dahlonega, GA  
  Guest Lecturer – Master’s level course  
  Provided a short lecture focused on expressive art to a graduate level counseling theories class. The lecture focused on how expressive art can be interpreted and how it is applicable in a variety of counseling settings.

**Supervision Experience**

- **2013- present**  
  Doctoral Supervisor  
  COUN 690 Counseling Skills  
  COUN 688 Organization, Administration, and Consultation in School Counseling  
  COUN 695 Internship – Play Therapy
Clinical Experience

August 2017- Dec. 2017  
**University of Mississippi – Department of Leadership and Counselor Education**, Oxford, MS  
Department Graduate Assistant  
Helped prepare for the CACREP site visit. Engaged in administrative duties. Assisted with the design of online classes. Assisted with the department’s collection of data.

August 2015- Present  
**The University Counseling Center – Desoto Center – The University of Mississippi**, Southaven, MS  
*Graduate Assistant Clinical Therapist*  
Provided individual counseling services to college students. The clients consisted of undergraduate students, transfer students, and non-traditional students. Various treatment modalities were employed.

January 2015- July 2015  
**Child Advocacy and Play Therapy Institute – The University of Mississippi**, Oxford, MS  
*Clinical Therapist*  
Provided individual play therapy to children and individual counseling to adolescents and adults. Held parent consultations and psychologist consultations. Worked with lawyers on court cases pertaining to clients.

August 2013- May 2015  
**The University Counseling Center – The University of Mississippi**, Oxford, MS  
*Graduate Assistant Clinical Therapist*  
Worked with undergraduate and graduate college students and provided individual and group counseling services. Groups focused on anxiety, depression, relationships, and social isolation. Individual session topics were diverse. Various treatment modalities were employed.

Feb 2013 - August 2013  
**Laurelwood – Northeast Georgia Hospital**, Gainesville, GA  
*Intake Specialist*  
Provided intake assessments in the inpatient facility, the Emergency Room (ER), and the Intensive Care Unit (ICU). Facilitated inpatient behavior health groups and verified insurance for proper client care.

April 2012- Oct 2012  
**Turning Point – Golden Care**, Cumming/Dahlonega, GA  
*Program Therapist*  
Provided group therapy for groups of culturally diverse adult clients in an intensive outpatient setting. Types of cases seen, but not limited to, included schizophrenia, bipolar disorder, major depressive disorder, personality disorders,
anxiety disorders, and substance use disorders. Various treatment modalities that were employed included cognitive therapies, person-centered, reality, solution-focused, expressive therapy, psych-educational, and basic living skills training. In addition to facilitating groups, responsibilities included intake assessments and treatment plans.

Aug 2011- April 2012  
**Turning Point – Golden Care**, Dahlonega/Cumming, GA  
**Intern – Behavioral Health Services**  
Provided group and individual therapy for groups of culturally diverse adult clients in an intensive outpatient setting. Types of cases seen, but not limited to, included schizophrenia, bipolar disorder, major depressive disorder, personality disorders, anxiety disorders, and substance use disorders. Various treatment modalities that were employed included cognitive therapies, person-centered, reality, solution-focused, expressive therapy, psych-educational, and basic living skills training. In addition to facilitating groups, responsibilities included intake assessments and treatment plans.

Research Experience

2008  
**Decisions Lab, University of Georgia**, Athens, GA  
**Research Assistant**  
Dr. Adam Goodie, Department of Psychology  
Duties included explaining and obtaining informed consent from participants and assisting participants to prepare for and to complete their involvement in various experiments that related to gambling behaviors and decision-making. In addition, became familiar with the relevant research literature on decision making and gambling and became familiar with interpreting data.

**RESEARCH & PUBLICATIONS:**

**Dissertation**


**Publications**


LEADERSHIP AND PROFESSIONAL DEVELOPMENT:

Chi Sigma Iota International Honor Society

2013 – present **Epsilon Mu Chapter**: The University of Mississippi, Oxford, MS
President (May 2014 – 2016)
Newsletter Committee Co-Chair (August 2015- 2016)

2011 – 2012 **Gamma Gamma Epsilon Chapter**: North Georgia College & State University, Dahlonega, GA
Treasurer (June 2011- May 2012)

Service

Jan 2015 – May 2015 **Graduate Student CACREP Study Team**: The University of Mississippi, Oxford, MS

August 2014- July 2015 **New PhD Student Mentor**: The University of Mississippi, Oxford, MS

Aug 2011 – May 2012 **Graduate Student Senate, Senator**: North Georgia College and State University, Dahlonega, GA

Aug 2008 – May 2009 **Bulldog Bigs, Mentor**: The University of Georgia, Athens, GA

HONORS AND AWARDS:

Outstanding Counselor Education Doctoral Student Award, 2018

Graduate Dissertation Fellowship Award, 2018

Chi Sigma Iota International Honor Society, Inducted 2011

Hope Scholarship, Awarded each semester 2007, 2008, 2009

PROFESSIONAL PRESENTATIONS:

National


multicultural competence in spiritual education. Presented at the Association for Counselor Education and Supervision Conference. Philadelphia, PA.

Regional


State


PROFESSIONAL AFFILIATIONS

International Organizations
Chi Sigma Iota International Honor Society

National Organizations
American Counseling Association
Association for Counselor Education and Supervision
Association for Play Therapy
Southern Association for Counselor Education and Supervision

State Organizations
Mississippi Counseling Association
Mississippi Graduate Student Counselor Association
Ole Miss Allies