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Comparing Stress Levels and Coping Styles in College Athletes and Non-athletes

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Abstract

The way individuals manage their stress levels impacts their everyday functioning. In addition to general life stressors, college athletes and college students have athletic and academic performances riding on their ability to cope with the wide variety of daily stressors. This study aimed to primarily look at the differences in stress levels and coping styles between college athletes and non-athletes. Additionally, the current research examined gender differences between the two groups regarding coping styles. College athletes did not report higher levels of perceived stress nor more positive coping styles than non-athletes as measured by the COPE questionnaire. There were significant gender differences with regard to coping as females reported using more negative coping styles. The results of this study are an important stepping-stone towards more extensive research into the differences and similarities of the stress levels and coping styles of these two groups.

Keywords: athletes, stress, coping, college students, gender

Comparing Stress Levels and Coping Styles in College Athletes and Non-athletes

There have been relatively few studies comparing student-athletes' stress levels and coping styles to those students that are not involved in athletics. Previous research has looked into how stress affects people in general, how college students report their stress levels, stressors that athletes face, and differences in stress levels between student athletes and non-athletic students (Alsentali & Anshel, 2015; Anshel et al. 2000; Azizi, 2011; Bamuhair et al. 2015; Ben-Zur, 2009; Day & Livingstone, 2001; Dalaviras, 2001; Gan & Anshel, 2009; Hoar, Evans, & Link, 2012; Holt & Mandigo, 2004; Lazarus & Folkman, 1984 as cited in Gan & Anshel, 2009; Lu et al. 2012; Monk, 2004; Moeini et al., 2008; Nicholls et al. 2006; Permuth-Levine, 2007; Pierceall & Keim, 2007; Rumbold, Fletcher, & Daniels, 2012; Surujial et al. 2013; Verma et al. 2011; Wilson & Pritchard, 2005). Other studies have looked at coping styles and gender differences, coping differences in sport, and gender differences in stress (Anshel & Kaissidis, 1997; Bamuhair et al. 2015; Ben-Zur, 2009; Christiansen & Smith, 2016; Masten & Reed, 2002; Day & Livingstone, 2001; Delahaij, 2011; Hadd & Crocker, 2007; Hoar, Evans, & Link, 2012; Holmberg & Sheridan, 2013; Lazarus & Folkman, 1984 as cited in Nicholls et al. 2006; Lu et al. 2012; Markser, 2017; Nicholls et al. 2006; Nicholls et al. 2008; Paluska & Schlenk, 2000; Pierceall & Keim, 2007; Rumbold, Fletcher, & Daniels, 2012; Secades et al. 2016; Verma et al. 2011). However, all of these fail to compare stress levels and coping styles of college athletes and their non-athletic counterparts. This study set out to do just that: compare the perceived levels of stress and coping styles of college students and college athletes.

Stress

Stress seems to be as much a part of the human experience as any other aspect of being. Stressors can vary from intrinsic and extrinsic and negative to positive (Alsentali & Anshel,

2015). Intrinsic stressors are those that come from an internal place (e.g., anxiety, overthinking, and fatigue), while extrinsic stressors are those that come from outside of a person (e.g., deadlines, interpersonal conflict, and financial strain: Alsentali & Anshel, 2015). People most commonly refer to stress as a negative experience. Stressors can bombard an individual from seemingly everywhere, which is usually what contributes to feeling “stressed out” (Monk, 2004). These stressors also vary from person to person. What one person identifies as a stressor in his/her life, may not be considered a stressor to someone else. Positive stressors, or eustress, are those that do not have a harmful effect on an individual’s well-being and keep an individual functioning at an effective level; for example, an impending deadline may cause one individual to be motivated and work hard enough to perform his/her best while it may cause another individual mental anguish or a lack of motivation (Monk, 2004). A buildup of stressors can affect a person’s overall wellness whether relationally, emotionally, psychologically, or physiologically (Moeini et al., 2008; Pierceall & Keim, 2007).

College students are put under intense pressure and have stressors surrounding them in every aspect of their lives. Freshmen especially are thrown from an atmosphere where they have existed in for eighteen years into a brand new college environment where nothing is familiar (Bamuhair et al. 2015; Wilson & Pritchard, 2005). Suddenly they are responsible for a multitude of things they may not have had to be responsible for before. These include, but are not limited to: picking a schedule of classes, making sure their major is the best one for them, making new friends and maintaining existing relationships, figuring out how to manage their time effectively, deal with finances, feeding themselves, getting their homework done, and if they have a job, working in addition to going to classes (Bamuhair et al. 2015; Wilson & Pritchard, 2005). With each of those responsibilities comes a multitude of stressors. Moeini et al. (2008) found that, as

an individual reported experiencing higher stress levels, he/she reported having lower self-efficacy, believing in his/her ability to manage those high stress levels, which, in turn, had a negative impact on mental health status. Students with high levels of stress reported lower self-esteem and also viewed themselves as less healthy (Pierceall & Keim, 2007). Adolescents and college students tend not to have had enough variety of life experiences to establish effective coping mechanisms, so there is potential for negative effects on their mental and physical health (Ben-Zur, 2009; Day & Livingstone, 2001; Moeini et al. 2008).

At most universities, there are student athletes and non-athletes and there is an ongoing debate between the groups as to who is more stressed out. Both groups have the same relative academic stressors in their lives, but it is possible that they have different sources of stress. College athletes report more sources of stress in their life than non-athletes (Wilson & Pritchard, 2005). These sources of stress include: time management, missing class due to team travel, burnout, fear of failure, dealing with team dynamics, anxiety, depression, and self-esteem issues (Wilson & Pritchard, 2005). There is evidence that athletes report higher numbers of stressors in their lives and higher levels of both intrinsic and extrinsic stressors (Alsentali & Anshel, 2015) than their non-athletic counterparts (Wilson & Pritchard, 2005). Child and adolescent athletes' biggest stress stems from fear of making a mistake (Holt & Mandigo, 2004), while older and more seasoned college and professional athletes' biggest stress comes from referees making bad calls (Gan & Anshel, 2009), suggesting a change from intrinsic to extrinsic stressors as the athlete masters a sport.

Stress from a buildup of responsibility can impact mental and physical performance (Rumbold, Fletcher, & Daniels, 2012). The level of success an athlete has is usually positively correlated with positive emotions, while the level of failure is positively correlated with negative

emotions (Hadd & Crocker, 2007). Emotional responses and mood can have a significant effect on stress management, self-efficacy, and, therefore, physical performance (Rumbold, Fletcher, & Daniels, 2012). If an athlete is not totally focused, their performance will suffer. This is especially concerning for athletes, their coaching staff, and those individuals invested in the success of an athletic team. When athletes at any level are under pressure from the demands of their sport and do not have adequate coping mechanisms in place, it can have a detrimental effect on their individual performance; if they participate in a team sport, it can have a bigger effect on the team's performance as a whole (Rumbold, Fletcher, & Daniels, 2012).

Unlike non-athletes, student athletes have to deal with the pressures of participating in a sport, the pressures of performing well academically to stay on the team, and the other stressors faced by non-student athletes. For too long, the sports industry neglected to train the mind to be resilient and healthy in order to increase performance and the overall well-being of the individual. Currently, there are strides being taken to ensure athletes have a way to decompress after stressful events, become mentally prepared before a significant game or match, and be healthy as a whole not just physiologically (Rumbold, Fletcher, & Daniels, 2012). Sports psychologists are in high-demand as professional teams realize the value of having their players mentally healthy. They train the mind just as any sports trainer helps train a specific area of the body (Rumbold, Fletcher, & Daniels, 2012). Athletes in general are also more prone to what Lazarus and Folkman (as cited in Gan & Anshel, 2009) refer to as acute stress, which occurs suddenly and is perceived to be unpleasant and can result from executing the wrong play, losing, injury, poor performance, negative comments from coaches or teammates, and bad calls made by referees (Alsentali & Anshel, 2015; Gan & Anshel, 2009; Holt & Mandigo, 2004; Nicholls et al. 2006).

Coping

Acute stress can lead to more negative or avoidant coping styles (e.g. mental disengagement, focus on and venting of emotions, denial, behavioral disengagement, and substance use) which tends to impede physical and mental performance (Hoar, Evans, & Link, 2012). Positive and approach coping styles (e.g. positive reinterpretation and growth, use of instrumental social support, active coping, religious coping, humor, restraint, use of emotional social support, acceptance, suppression of competing activities, and planning) involve addressing problems as they arise and dealing with them, while negative and avoidant coping involves ignoring the problem all together or not doing anything to actively fix the issue(s) (Nicholls et al. 2006). How a person copes with a specific stressor affects his/her performance and coping effectiveness (Delahaij, 2011). An individual's coping style is also closely correlated to their coping efficacy, the belief that they are able to manage their stress well due to established coping mechanisms (Delahaij, 2011). Overall coping effectiveness is related to what kind of coping styles an individual employs for different situations (Nicholls et al. 2006). Coping with stressful events as a whole is not something that happens one time, it is an on-going process (Lazarus & Folkman, 1984 as cited in Nicholls et al. 2006). Learning to cope is the same as learning any other basic skill: practice results in better execution. Older, master athletes, tend to use more positive and approach coping styles simply because they have less stress associated with their sport as they have successfully mastered the skill associated with their individual sport (Hoar, Evans, & Link, 2012). This should influence coaches and trainers to encourage novice athletes to employ positive coping strategies. Encouraging them to not rely on avoidant and negative coping styles, would help to increase their mental toughness and resilience.

Mental toughness, an ability to withstand increasingly difficult situations or stressors, is associated with more positive, problem-solving, and approach coping styles which lead to an increase in performance (Nicholls et al. 2008). Positive and approach coping styles are positively correlated with resilience, being able to adapt and overcome in the face of significant adversity or risk, in athletes which leads to more adaptability in applying coping styles based on different stressors (Masten & Reed, 2002; Secades et al. 2016). When it comes to mental toughness, athletes are able to deal with competitive situations well due to their coping ability and emotional regulation (Madrigal, Gill, & Willse, 2017). Their amount of mental toughness often predicts their ability to use problem and emotion-focused coping when dealing with particular stressors associated with their sport (Madrigal, Gill, & Willse, 2017). As one advances in age their available repertoire of coping styles increases (Holt & Mandigo, 2004). The existing coping literature begs for further studies to look at how and when to correctly introduce helpful coping styles pre-college and during college (Hoar, Evans, & Link, 2012; Holt & Mandigo, 2004). This is to ensure continued participation in athletics does not harm mental status and physical performance because athletes are not at all immune from mental disorders and emotional strain or emotion disorders (Markser, 2017).

Stress and Coping in Athletes

Coping styles and strategies vary based on the kind of stressor. These could look like internal (e.g., negative thoughts, anxiety, emotions, fatigue, or cognitive overload) or external stressors (e.g., demand from schoolwork, reprimands from coaches or professors, family pressures, unfair situations) and the coping styles range anywhere from avoidance to frustration (Anshel et al. 2000; Dalaviras, 2001). Previous stress research has utilized self-report measures to gain information regarding stress in college athletes and non-athletes (Alsentali & Anshel,

2015; Anshel et al. 2000; Dalaviras, 2001; Lu et al. 2012; Permuth-Levine, 2007; Surujial et al. 2013; Verma et al. 2011; Wilson & Pritchard, 2005).

Mark Anshel (1997, 2000, 2009) has dedicated his research to studying how athletes, at all levels, handle their stress levels and what coping mechanisms they employ given certain stress. There are different aspects to athletes' selection of coping styles and coping effectiveness of: perceived stress level, perceived controllability of the stressor, burnout, physical activity level, and mindset (Alsentali & Anshel, 2015). Not everyone has the same coping strategies to deal with stress in their lives and not all athletes have the same coping strategies (Anshel et al. 2000; Azizi, 2011). Some individuals turn to humor as a way to deal with certain stressful events, while others turn to their social support in friends or family, and even still others may ignore the problem as though to act like if they do not think about it, then it cannot be happening. Positive coping styles (e.g., approach or problem-solving) have led to living a life that manages stress levels while negative coping styles (e.g. avoidant or denial) involve not managing stress levels in a healthy way and therefore lead to an increase in potential for health problems, mental health issues, and overall burnout in general (Azizi, 2011; Ben-Zur, 2009; Day & Livingstone, 2001)

Burnout is important to take into consideration because an overload of stress with no established positive coping strategy can lead to students becoming overwhelmed in both their academic and athletic responsibilities (Holmberg & Sheridan, 2013; Lu et al. 2012). This burnout leads to a decrease in performance in both areas and individuals are essentially left with no skill to give in either area of their college career. Research has shown that a positive mindset can reduce the effects of stress and potentially reduce the risk of burnout, as well as employment of positive and approach coping styles (Masten & Reed, 2002).

Physical Activity

College athletes in general engage in higher levels of physical activity on a weekly basis than their non-athletic counterparts (Clemente et al. 2016). Levels of physical activity have been shown to have a relationship with more positive and approach coping styles and in general decreasing stress levels (Azizi, 2011). Physical activity causes a release of endorphins which helps with stress reduction and perception (Paluska & Schlenk, 2000). This reduction in perception of stress causes an individual to look at a stressor in a more manageable way than he/she did before engaging in physical activity. Engaging in physical activity also correlates to more positive emotion based coping (Jerlock et al. 2006). However, physical activity alone is not sufficient enough to act as a coping style for all stress. There needs to be a focus on increasing the amount and diversity of athletes' coping styles since suppressing and ignoring stress has a negative impact on an individual's well-being (Nicholls et al. 2006). Athletes need to learn coping mechanisms for handling stress in different situations.

Gender Differences

Stress levels and coping styles as well as athletics have not escaped the effects of gender differences. In terms of stress levels, females tend to report higher levels of stress compared to males (Benishek & Lopez, 1997). One source of stress unique to females may be the reality of stereotype threat or the risk of confirming a negative stereotype about their identity whether racially or ethnically or even with regard to their gender or culture group (Plancherel, Bologini, & Halfon, 1998). An example of this would be females hearing that there is a negative stereotype for them to be worse at math than men, and if they are told this before they have to take a math test, more often than not their performance will suffer simply due to the introduction of the stereotype thus falsely proving or confirming that stereotype. Female athletes typically are

bombarded by comments regarding their athletic inferiority compared to their male counterparts. This is an added stressor not only to females in general but to athletes as well.

While Women tend to perceive more stress in their life than men (Bamuhair et al. 2015; Benishek & Lopez, 1997), they also report having more, if not necessarily healthier, coping mechanisms in place to combat the higher number of stressors they face than men (Bamuhair et al. 2015; Pierceall & Keim, 2007; Verma et al. 2011). Males and females often respond to stress differently both in the way they cope and how it affects them mentally and physically. With a build of up stressors, females usually perceive their stress more than males and that perceived stress often leads to physical illness (Benishek & Lopez, 1997). In terms of personality, neuroticism in females was predictive of the frequency and severity of illness (Benishek & Lopez, 1997). Females seek social support more often while increasing their effort to manage goal frustration (Crocker & Graham, 1995). Females also typically report use of more negative coping styles such as avoidance (mental or physical withdrawal; Hoar, Evans, & Link, 2012)

While there are gender differences in non-athletes when it comes to perceiving stress and coping with it, there are also gender differences in athletes in their perception of and response to stress. An initial study by Haney and Long (1995) found that female athletes feel more in control and self-efficient when it comes to coping as well as report less avoidant coping styles than male athletes. In contrast, Gnacinski et al. (2017) found that in NCAA Division I athletes, females reported lower self-efficacy in terms of their ability to apply their established coping skills when faced with mentally stressful barriers or obstacles. However, when it comes to competitive stress, males report using more approach coping than females (Anshel, Kang, & Meisner, 2010). According to Anshel and Kaissidis (1997), females who report using more avoidance coping styles in the presence of acute stress have lower athletic performance skill

levels than males. Female athletes also use more emotion-focused coping than males (Hammermeister & Burton, 2004).

Present Research

The present study examines the different levels of stress and coping styles in college athletes and non-athletes. This purpose is influenced by the existing literature but also has a goal of helping to answer the question of who is more stressed out. In accordance with previous research (Nicholls et al., 2006), it is expected that the group with the highest reported stress levels is able to deal with it in a more positive manner. In previous research, there have been limitations such as, not administering more than one survey to both athletes and non-athletes, and combining these findings into a study (Wilson & Pritchard, 2005). Most studies only look at certain aspects of stress in college students, or athletes, or non-athletes (Alsentali & Anshel, 2015; Anshel et al., 2000; Azizi, 2011; Bamuhair et al., 2015; Dalaviras, 2001; Gan & Anshel, 2009; Holt & Mandigo, 2004; Lazarus & Folkman, 1984 as cited in Gan & Anshel, 2009; Lu et al., 2012; Nicholls et al., 2006; Permeth-Levine, 2007; Surujial et al., 2013; Verma et al., 2011; Wilson & Pritchard, 2005, but very few tend to look at stress levels in college athletes and comparing it to their non-athletic counterparts. Even fewer still, compare stress levels of both groups and coping styles. One purpose of this current study is to add to minimal existing literature on gender differences in perceived stress and coping styles with regard to athletics (Anshel & Kaissidis, 1997; Anshel, Kang, & Meisner, 2010; Bamuhair et al., 2015; Christiansen & Smith, 2016; Gnacinski et al., 2017; Hammermeister & Burton, 2004; Haney & Long, 1995; Pierceall & Keim, 2007; Verma et al., 2011).

Wilson and Pritchard (2005) examined the sources of stressors reported by college athletes and non-athletes. Consistent with previous research, they found that college athletes

reported a wider variety of stressors than their non-athletic peers (Wilson & Pritchard, 2005).

This finding influenced the primary hypothesis in the present study that:

Hypothesis 1: College athletes report higher levels of stress than non-student-athletes.

As previous research on coping styles suggests, college athletes tend to have already established more positive and approach coping styles than non-athletes (Azizi, 2011). This led to the formulation of my second hypothesis:

Hypothesis 2: College athletes report using more positive and approach coping styles than non-athletes.

A limitation reported by Wilson and Pritchard (2005) in the comparison of athletes and non-athletes was the lack of information as far as gender differences. As previous research completed in the area of coping styles suggests, women tend to have less adequate coping styles than men (Verma et al. 2011). This prompted an addition of a third hypothesis to specifically look at gender differences overall. This hypothesis was aimed at coping styles:

Hypothesis 3: Females, report more negative and avoidant coping styles than males, regardless of the athletic status.

Purpose of Study

The present study examined the stress levels and coping styles of college athletes and non-athletes, and the gender differences in each group. I hypothesized that college athletes would report higher levels of stressors in their lives than their non-athletic peers. I expected to see college athletes report more positive or approach coping styles rather than negative or avoidance coping styles. I also expected females to report more negative or avoidance coping styles. The present study is unique from previous research in that it combined not only these two groups of students, but also included a look at their coping styles and gender differences.

Method

Participants and Design

Participants were 561 university students consisting of 470 females and 91 males from the University of Tennessee at Chattanooga. Students were identified as Non-athletes (n= 507) and Athletes (n= 54). Participants ranged in age from 18 to 26 with 68.8% of students being 18-20 years of age. Participation was voluntary and a majority of students were recruited from psychology courses and were offered extra credit for their participation. Most participants were White Caucasian/Non-Hispanic (78.6%) with the next largest ethnicity being African American, Black (7.7%). At the beginning of the online survey (Appendix B), participants read and agreed to an informed consent and were assured that their responses would be kept confidential. This research was approved by the university's Institutional Review Board (see Appendix E for approval letter) prior to the administering of the survey.

Materials and Procedure

Participants were recruited from a variety of college courses as well as through the athletics department. Additionally, athletic advisors encouraged their students to take the survey and psychology professors gave the option of extra credit for their students to participate in the survey. The survey was distributed through Qualtrics software and most students accessed the survey through the SONA system by way of the psychology department's website. Otherwise, the participants were given an anonymous link to the survey on Qualtrics in order to complete the study. Participants were asked a series of demographic questions (see Appendix A) regarding gender, sexuality, age, ethnicity, year in school, average hours of classes, GPA, marital status, whether or not they were an athlete, how many hours of sleep they get on average, and

academic department. Participants then answered the questions from the COPE Questionnaire (COPE; Carver, Scheier, & Weintraub, 1989), the Perceived Stress Scale (PSS; Cohen & Williamson, 1988), and the International Physical Activity Questionnaire (IPAQ; Booth, 2000). The COPE and IPAQ were both administered to identify coping mechanisms of the participants while the PSS was used to assess participants' stress levels.

The COPE questionnaire (see Appendix B) has been shown to have good reliability. Participants were asked a series of 60 questions; with each question identifying a specific type of way participants cope with stressful events by asking participants to report how they feel or what they do when they experience a stressful event. For example, "I get upset and let my emotions out," "I make a plan of action," "I drink alcohol or take drugs, in order to think about it less," and "I learn something from the experience." Participants were instructed to rate the level to which each statement described their normal experience with a stressful event given these four options: "1 = I usually don't do this at all; 2 = I usually do this a little bit; 3 = I usually do this a medium amount; 4 = I usually do this a lot." Items were categorized into positive and negative coping styles. Positive coping styles included: positive reinterpretation and growth (item numbers: 1, 29, 38, 59), use of instrumental social support (item numbers: 4, 14, 30, 45), active coping (item numbers: 5, 25, 47, 58), religious coping (item numbers: 7, 18, 48, 60), humor (item numbers: 8, 20, 36, 50), restraint (item numbers: 10, 22, 41, 49), use of emotional social support (item numbers: 11, 23, 34, 52), acceptance (item numbers: 13, 21, 44, 54), suppression of competing activities (item numbers: 15, 33, 42, 55), and planning (item numbers: 19, 32, 39, 56). Negative coping styles included: mental disengagement (item numbers: 2, 16, 31, 43), focus on and venting of emotions (item numbers: 3, 17, 28, 46), denial (item numbers: 6, 27, 40, 57),

behavioral disengagement (item numbers: 9, 24, 37, 51), and substance use (item number: 12, 26, 35, 53).

The IPAQ (see Appendix C) asked participants to report their amount of physical activity per day per week and has good validity and reliability ($r = 0.80$). Questions ranged from no activity and walking to moderate activity and vigorous activity. Participants were asked how many days per week they engaged in different levels of activity and for each day were asked approximately how many minutes. The higher levels of physical activity reported are used to identify physical activity as a positive coping style. After hours and days of activity are calculated, participants are categorized by levels: low, moderate, and high activity.

The PSS (see Appendix D) asked participants to rate their stress levels over the past month by inquiring about their thoughts and feelings in ten situations. It is also a Likert scale that asked questions such as: “In the last month, how often have you been upset because of something that happened unexpectedly?” “In the last month, how often have you felt nervous and ‘stressed’?” and “In the last month, how often have you been angered because of things that were outside of your control?” For each question participants were instructed to rate the level they experienced each feeling or thought on a scale of “0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often.” This self-report questionnaire has a reliability and validity ($r = 0.85$). The higher the score, the higher the perceived stress level. A score of 13 represents an average stress level while scores of 20 and higher represent high levels of stress.

Results

An independent samples t test was conducted to evaluate the hypothesis that college athletes would report higher levels of stress in their lives than their non-athletic peers. Due to the

unequal sample size of the group, the t value that does not assume equal variances was reported. There was no difference in stress levels between non-athletes ($M= 19.80, SD= 6.93$) and athletes ($M= 18.78, SD= 5.50$), $t(65) = 1.21, p= .23$.

An independent samples t test was conducted to evaluate the hypothesis that college athletes would report more overall positive coping styles, by way of the COPE, than their non-athletic peers. There was no difference in overall positive coping styles between athletes ($M= 108.81, SD = 15.4$) and non-athletes ($M= 108.76, SD = 17.17$), $t(58) = -.02, p= .98$. However, upon further analysis, there was a difference found in the positive coping style of “use of emotional and social support” between athletes ($M= 9.96, SD = 3.31$) and non-athletes ($M= 11.20, SD = 3.40$) with non-athletes using more emotional and social support to cope with stress,, $t(64) = 2.59, p = .01$.

An independent samples t test was conducted to evaluate the hypothesis that college athletes would report more positive coping by way of activity level than their non-athletic peers. There was a significant difference between athletes ($M= 10115, SD= 5016$)¹ and non-athletes ($M= 3925, SD = 3659$), with athletes being more active than non-athletes, $t(59) = -8.82, p < .001$.

An independent samples t test was conducted to evaluate the hypothesis that non-athletic college students use more negative coping styles than college athletes. There was a significant difference between non-athletes ($M=39.13, SD= 8.91$) and athletes ($M= 35.90, SD= 8.85$), $t(62) = 2.50, p = .02$.

¹ This number may seem unusually large but it is standard when talking about MET scores and represents vigorous physical activity typical of athletes (Cheng, 2016). Calculation of MET scores were provided by the research tool developed by Dr. Hoi Lun Cheng PhD.

An independent samples *t* test was conducted to evaluate the hypothesis that females would report more negative coping styles than males. There was a significant difference between females ($M= 39.39, SD= 9.14$) and males ($M= 35.76, SD = 7.10$) with females using more negative coping styles, $t(141) = 4.11, p < .001$.

Discussion

The data and findings of the present study supported some of the hypotheses. While athletes did not report more positive coping styles than their non-athletic counterparts, they also did not report more negative coping styles. There was no significant difference between the two groups in perceived stress levels as both groups reported high levels of perceived stress. With regards to gender differences, females reported higher levels of stress and also reported more negative coping styles than males.

Athletes did not report higher levels of stress than non-athletes. There was not a significant difference so both groups reported the same levels of stress in their life. This finding contradicts the finding by Wilson and Pritchard (2005) that athletes report higher stress levels. However, Wilson and Pritchard (2005) found that athletes report a wider variety of stressors and therefore higher stress levels based on each category and this current research focused on overall perceived stress. Due to previous research suggesting that athletes more often using more positive coping styles, this may offset the perception of their stress level. Further research in comparing both stress and coping will need to look at the individual stressors to support this idea.

Athletes and non-athletes reported the same frequency of using positive coping styles so there was no evidence to support the hypothesis. This finding is not consistent with previous

findings that athletes use more positive coping styles. In fact, non-athletes reported using one particular coping style more than athletes: the use of emotional and social support. Perception of emotional and social support is important to increasing coping efficacy and therefore coping effectiveness in managing stress (Delahaij, 2011).

Athletes often engage in more physical activity than their non-athletic peers. Due to the release of endorphins, exercise can act as a positive way of managing stress (Paluska & Schlenk, 2000). The collected data supports the hypothesis by showing that athletes reported more physical activity. Whether or not they use it as a coping style requires further research. If students who are not inclined to engage in physical activity on a regular basis such as going to the gym and lifting weights, it might be beneficial to offer alternative ways of becoming physically active like walking for thirty minutes a day, taking the stairs instead of the elevator, going on a scenic bike ride to clear their mind, doing something quick as a study break to elevate the heart rate, etc.

While there was no significant difference in overall positive or negative coping styles, there was a difference found in particular dimensions of the COPE negative coping styles. Specifically, non-athletes reported turning towards mental disengagement, focus and venting of emotions, and substance abuse more than athletes. There is more potential for the average college student to have negative coping styles in place to manage the stress in their lives. These specificities are not shocking as they seem to be typical of college students in general.

Females overall reported higher perceived stress levels as well as more negative coping styles than males. They reported being more prone to use mental disengagement, focus on and venting of emotions, and denial. As a society, there is a pressure put on females to ignore stress

because their stress is not seen as valid sometimes as males (Matlin, 2012). It would give an excuse or reason for being weaker or more emotionally unstable. In addition to basic stressors associated with being human, females have a variety of stressors to deal with simply because of their gender. These stressors include: inequality socially, economically, and politically, dealing with a menstruation cycle each month, and constantly having to fight to be recognized for being as capable as their male counterparts (Matlin, 2012). The findings that females reported higher perceived stress levels and more negative coping styles than males, support the original hypothesis and adds to existing literature on gender differences in coping styles.

Females also reported using more positive coping mechanisms via the COPE, such as instrumental social support, emotional and social support, and religious coping, while males reported resorting to humor more often as a positive coping style. This is consistent with societal norms as making light of a situation makes it seem as though the stress is not as serious as it is and therefore not worth addressing it head on (Matlin, 2012). As far as using emotional and social support, men are not encouraged to rely on either because using them defies traditional masculinity (Matlin, 2012). Females reporting using more religious coping might be due to societal pressure for females to be seen as more religious or pure but then again religious coping can refer to a broad range of spirituality.

Males had higher IPAQ MET scores than females, meaning they reported engaging in more physical activity on average than females. This finding may have been even higher given a higher number of male participants due to the higher amount of physical activity males engage in than females but again, this finding aligns with social norms as boys are usually put into sports regardless of athletic inclination or interest (Matlin, 2012). It should be noted that there were no gender differences found within the individual groups of athletes and non-athletes.

The results of present study are important as they add to existing literature on the topic of stress and coping styles in college athletes and college students in general as well as gender differences because there is extensive research on the individual groups but the field is lacking in comparison exploratory studies. These two groups of students, in terms of mental health and counseling of any kind, should be handled and treated differently based on their individual and specific needs as well as specific stressors. These stressors could range anywhere from having to maintain a scholarship to keep good standing on the team to maintaining interpersonal relationships in multiple arenas. However, based on the finding that there was no significant difference in stress levels, mental health professionals should work with both groups, as college students, to help them manage their high levels of stress effectively. While both groups reported high levels of stress overall, further research should focus on which stressors are more prevalent in which group and how to come up with ways to effectively cope with those stressors.

Just as college campuses have counseling centers and promote mental health awareness to all students, there needs to be extra care and attention focused on athletes if there is not that focus already. Too often athletes raised in a poorer socioeconomic environment will become successful based on natural skill and incredible work ethic, but will not have ever been told how to express their emotions or their feelings and will keep them bottled up inside (Bejar & Butryn, 2016). Existing research is lacking information on socioeconomic status and coping styles, so further studies should be conducted in this area, especially regarding athletes. Mental health professionals need to be able to look at how athletes previously and currently deal with stress levels and how they manage their emotions and prioritize their mental health in order to understand how to best help them unlock their full athletic potential without causing great strain on not only their bodies but their minds as well.

Mental health professionals should also make a point to educate college students who are not athletes on how to better cope with stress. Because these results indicate that non-athletes tend to turn more often to mental disengagement, focus and venting of emotions, and substance abuse than non-athletes, it would behoove mental health professionals and counselors to strategize with students on how to avoid solely using these negative coping styles. They could begin by highlighting the mental and physical health benefits of using more positive coping styles.

Limitations

This study was limited by the unequal number of athlete participants in comparison to the non-athletic students. This is not an uncommon problem in studies involving athletes especially at universities. Working with the athletic department to obtain approval for administering the survey to athletes and being in communication with their advisors to have them promote the survey to their students, helped boost the number of athletic participants to a solid sample even though it was not close to the number of non-athletes. However, according to the University of Tennessee at Chattanooga's office of Planning, Evaluation, and Institutional Research (2017), this is representative of the university's population as the number of athletes on campus is significantly lower than that of college students who are not athletes.

This study was also limited in the level of athletes that participated. Both NCAA sponsored athletes and club sport athletes participated in the survey. However, due to club sport athletes' participation in their respective sports not being contingent upon scholarship or academic performance, I decided it was best to include them in the non-athlete sample. NCAA sponsored athletes, for example, might be more worried about keeping their scholarships and good standing on the team in addition to stressors experienced by both groups but club sport

athletes tend to voluntarily play the sport either for the love of the game or the routine of continuing to be involved in a sport. Further research into comparing stress levels and coping styles between college athletes and their non-athletic peers is needed to specifically look at the differences in stressors experienced by both groups, not just perceived levels, as well as how coping styles differ between the groups depending on their level of athletic involvement. While the individual stressors will vary person to person, some stressors may be more common of one group—either athletes or non-athletes.

A replication of this study should include asking participants who are athletes to indicate which sport they play. This would allow for a comparison of stress levels in particular sports. It would be interesting to see if there is a difference in team sports as there is more of a social aspect in comparison to individual sports where an athletes' success depends solely on their performance each time. Other covariates to consider that were not a focus of this study would be a difference in stress levels and coping styles of athletes and college students of different ethnicities, socioeconomic statuses, and races. Each of these covariates could offer a deeper understanding of the stressors athletes face and the differences within athletes as a group. Further research should also look into mental toughness and resiliency between the two groups and if there is any difference in perceived stress level as well as coping styles.

A limitation of the present study was that it looked at gender differences across the board, not specifically between athletes in terms of stress levels and coping styles. To ascertain a more adequate look into gender differences in college athletes and college students in general, there needs to be a more intentional equal sample size from each gender. This study had an overwhelming majority of female participants in both groups. A possible explanation for this might be that I heavily recruited psychology courses and the psychology department at the

University of Tennessee at Chattanooga has an unequal distribution of male and female undergraduate students with a significantly larger number of females than males. This could be remedied in further studies focused on the gender differences in stress levels and coping styles of athletes and college students by recruiting participants from multiple areas and working hard to ensure equal sample sizes.

Another limitation would have to be the timing of each participant taking this survey. While college overall is a stressful period in an individual's life, some participants took it during a less stressful time in their semester, while others may have taken it during periods of higher stress. Some of the athlete participants might have not been in a competition season while taking the survey but other participants might have been. In future similar studies, an emphasis on trying to have participants take the survey during either highly stressful times (e.g., finals week or competition days) or relatively mildly stressful times (e.g., a regular off season week with no added academic stress) would be beneficial to have a baseline to compare reports of stress levels to. Additionally, looking into the difference between college athletes' and professional athletes' stress levels with respect to pre-season, competition season, and postseason would inform the existing research on how to help all levels of athletes cope with stress at specific times and tailor coping strategies to those specific times of higher or lower stress.

Conclusion

This study ultimately found that both college students and college athletes reported the same high levels of stress although the specific stressors were not measured. Athletes also reported the same number of positive coping styles as non-athletes while non-athletes reported utilizing emotional and social support more often than athlete. Predictably, athletes reported

engaging in more physical activity than non-athletes, but the results of this study cannot conclude that physical activity acts as a coping style for athletes, further research is needed in that particular area. As far as coping styles, both groups reported similar numbers of positive and negative coping styles. However, non-athletes reported using more mental disengagement, focus on and venting of emotions, and substance abuse than athletes.

In terms of gender differences, females reported higher levels of perceived stress. They also reported using more negative coping styles than males such as mental disengagement, focus on and venting of emotions, and denial. Females reported using three styles of positive coping more than males and those were instrumental social support, emotional and social support, and religious coping. The only positive coping style category males reported higher usage of was humor. As far as physical activity levels, males reported engaging in more vigorous physical activity than females. The findings of this research have the potential to lead to more in depth and exploratory studies regarding stress, coping styles, and gender differences in athletes and college students.

References

- Alsentali, A. M. & Anshel, M. H. (2015). Relationship between internal and external acute stressors and coping style. *Journal of Sport Behavior*, 38(4), 357-375.
- Anshel, M. H. & Kaissidis, A. N. (1997). Coping style and situational appraisals as predictors of coping strategies following stressful events in sport as a function of gender and skill level. *British Journal of Psychology*, 88, 263-276.
- Anshel, M. H., Kang, M., & Miesner, M. (2010). The approach-avoidance framework for identifying athletes' coping style as a function of gender and race. *Personality and Social Sciences*, 51, 341-349. doi: 10.11/j.1467-9450.2009.00796.x
- Anshel, M. H., Williams, L. R. T., & Williams, S. M. (2000) *The Journal of Social Psychology*, 140(6), 751-773.
- Azizi, M. (2011). Effects of doing physical exercises on stress-coping strategies and the intensity of the stress experienced by university students in Zabol, southeastern Iran. *Procedia - Social and Behavioral Sciences*, 30, 372-375.
<https://doi.org/10.1016/j.sbspro.2011.10.073>
- Bamuhair, S. S., Al Farhan, A. I., Althubaiti, A., Agha, S., ur Rahman, S., & Ibrahim, N. O. (2015) Sources of stress and coping strategies among undergraduate medical students enrolled in a problem-based learning curriculum. *Journal of Biomedical Education*, 2015, 1-8 doi:10.1155/2015/575139
- Bejar, M. P., & Butryn, T. M. (2016). Experiences of coping with injury in NCAA division I athletes from low-to-middle socioeconomic status backgrounds. *Journal of Sport Behavior*, 39(4), 345-371.

- Benishek, L. A. & Lopez, F. G. (1997). Critical evaluation of hardiness theory: Gender differences, perception of life events, and neuroticism. *Work and Stress: An International Journal of Work, Health, & Organizations*, *11*, 33-45. doi: 10.1080/02678379708256820
- Ben-Zur, H. (2009). Coping styles and affect. *International Journal of Stress Management*, *16*(2), 87-101. <http://dx.doi.org/10.1037/a0015731> Retrieved from <https://proxy.lib.utc.edu/login?url=https://search.proquest.com/docview/614506456?accountid=14767>
- Booth, M. L. (2000). Assessment of physical activity: An international perspective. *Research Quarterly for Exercise and Sport*, *71*(2), 114-20.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, *56*, 267-283.
- Cheng, H. L. (2016). A simple, easy-to-use spreadsheet for automatic scoring of the International Physical Activity Questionnaire (IPAQ) Short Form. *ResearchGate*.
- Christensen, D. S. & Smith, R. E. (2016). Psychological coping skills as predictors of collegiate golf performance: Social desirability as a suppressor variable. *Sport, Exercise, and Performance Psychology*, *5*(1), 67-80. <http://dx.doi.org/10.1037/spy0000049> Retrieved from <https://proxy.lib.utc.edu/login?url=https://search.proquest.com/docview/1727655517?accountid=14767>

- Clemente, F. M., Nikolaidis, P. T., Martins, F. M. L., & Mendes, R. S. (2016). Weekly physical activity patterns of university students: Are athletes more active than non-athletes? *SpringerPlus*, 5(1), 1808. <http://doi.org/10.1186/s40064-016-3508-3>
- Cohen, S. & Williamson, G. (1988). Perceived stress in a probability sample of the united states. Spacapan, S. and Oskamp, S. (Eds.) *The Social Psychology of Health*. Newbury Park, CA: Sage, 1988.
- Crocker, P. & Graham, T. (1995). Coping by competitive athletes with performance stress: Gender differences and relationships with affect. *The Sport Psychologist*, 9, 325-338.
- Dalaviras, T.J. (2001). *Coping with an academic stressor among college athletes and non-athletes* (Doctoral dissertation). Retrieved from UMI.
- Day, A. L., & Livingstone, H. A. (2001). Chronic and acute stressors among military personnel: Do coping styles buffer their negative impact on health? *Journal of Occupational Health Psychology*, 6(4), 348-360. <http://dx.doi.org/10.1037/1076-8998.6.4.348> Retrieved from <https://proxy.lib.utc.edu/login?url=https://search.proquest.com/docview/614434930?accountid=14767>
- Delahaij, R., van Dam, K., Gaillard, A. W. K., & Soeters, J. (2011). Predicting performance under acute stress: The role of individual characteristics. *International Journal of Stress Management*, 18(1), 49-66. <http://dx.doi.org/10.1037/a0020891> Retrieved from <https://proxy.lib.utc.edu/login?url=https://search.proquest.com/docview/849701029?accountid=14767>
- Gan, Q. & Anshel, M. H. (2009). Sources of acute stress among Chinese college athletes as a function of gender and skill level. *Journal of Sport Behavior*, 32(1), 36-52. Retrieved from

<https://proxy.lib.utc.edu/login?url=https://search.proquest.com/docview/215874128?accountid=14767>

Gnacinski, S. L., Massey, W. V., Hess, C. W., Nai, M. M., Arvinen-Barrow, M., & Meyer, B. B. (2017). Examining stage of change differences in NCAA student-athletes' readiness for psychological skills training. *Sport Psychologist, 31*(4), 356-368.

Hadd, V. N. & Crocker, P. R. E. (2007). The effect of stress-related factors on post-performance affects in competitive adolescent swimmers. *International Journal of Sport and Exercise Psychology, 5*(2), 142-157. Retrieved from <https://proxy.lib.utc.edu/login?url=https://search.proquest.com/docview/229076849?accountid=14767>

Hammermeister, J. & Burton, D. (2004). Gender differences in coping with endurance sport stress: Are men from Mars and women from Venus? *Journal of Sport Behavior, 27*, 148-164.

Haney, C. J. & Long, B. C. (1995). Coping effectiveness: A path analysis of self-efficacy, control, coping, and performance in sport competitions. *Journal of Applied Social Psychology, 25*, 1726-1746. doi: 10.1111/j.1559-1816.1995.tb01815.x

Hoar, S. D., Evans, M. B., & Link, C. A. (2012). How do master athletes cope with pre-competitive stress at a "senior games"? *Journal of Sport Behavior, 35*(2), 181-203. Retrieved from <https://proxy.lib.utc.edu/login?url=https://search.proquest.com/docview/1015246909?accountid=14767>

Holmberg, P. M. & Sheridan, D. A. (2013). Self-determined motivation as a predictor of burnout among college athletes. *The Sport Psychologist, 27*. 177-187.

- Holt, N. L. & Mandigo, J. L. (2004). Coping with performance worries among youth male cricket players. *Journal of Sport Behavior*, 27(1), 39-57. Retrieved from <https://proxy.lib.utc.edu/login?url=https://search.proquest.com/docview/215873274?accountid=14767>
- Jerlock, M., Gaston-Johansson, F., Kjellgren, K. I., & Welin, C. (2006). Coping strategies, stress, physical activity and sleep in patients with unexplained chest pain. *BMC Nursing*, 5, 7. <http://doi.org/10.1186/1472-6955-5-7>
- Lu, F.J.H., Hsu, Y.W., Chan, Y.S., Cheen, J.R., & Kao, K.T. (2012). Assessing college student-athletes' life stress: initial measurement development and validation. *Measurement in Physical Education and Exercise Science*, 16. 254-267. doi: 10.1080/1091367X.2012.693371
- Madrigal, L., Gill, D. L., & Willse, J. T. (2017). Gender and the relationships among mental toughness, hardiness, optimism and coping in collegiate athletics: A structural equation modeling approach. *Journal of Sport Behavior*, 40(1), 68-86.
- Markser, V. Z. (2011). Sport psychiatry and psychotherapy. Mental strains and disorders in professional sports. Challenge and answer to societal changes. *European Archives of Psychiatry and Clinical Neuroscience*, 261, 182-5. <http://dx.doi.org/10.1007/s00406-011-0239-x>
- Masten, A. S., & Reed, M. G. (2002). Resilience in development. In C. R. Snyder, & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 74-88). London, England: Oxford University Press
- Matlin, M. W. (2012). *The psychology of women*, seventh edition. Belmont, CA: Wadsworth.

- Moeini, B., Shafii, F., Hidarnia, A., Babaii, G. R., Birashk, B., & Allahverdipour, H. (2008). Perceived stress, self-efficacy and its relations to psychological well-being status in Iranian male high school students. *Social Behavior & Personality: An International Journal*, *36*(2), 257-266.
- Monk, E. M. (2004). Student mental health: The case studies. *Counseling Psychology Quarterly*, *17*(4), 395-412.
- Naylor, A. H. (2009). The role of mental training in injury prevention. *Athletic Therapy Today*, *14*(2), 27-29.
- Nicholls, A. R., Holt, N. L., Polman, R. J., & Bloomfield, J. (2006). Stressors, coping, and coping effectiveness among professional rugby union players. *Sport Psychologist*, *20*(3), 314-329.
- Nicholls, A. R., Polman, R. C. J., Levy, A. R., & Backhouse, S. H. (2008). Mental toughness, optimism, pessimism, and coping among athletes. *Personality and Individual Differences*, *44*(5), 1182-1192, doi: 10.1016/j.paid.2007.11.011
- Paluska, S. A. & Schlenk, T. L. (2000). Physical activity and mental health. *Sports Medicine*, *29*(3), 167-180.
- Permeth-Levine, R. (2007). *Differences in perceived stress, affect, anxiety, and coping ability among college students in physical education courses* (Doctoral dissertation). Retrieved from UMI. 3260387.
- Pierceall, E. A. & Keim, M. C. (2007). Stress and coping strategies among community college students. *Community College Journal of Research and Practice*, *31*(9), 703-712, doi: 10.1080/10668920600866579

- Plancherel, B., Bolognini, M., & Halfon, O. (1998). Coping strategies in early and mid-adolescence: Differences according to age and gender in a community sample. *European Psychologist, 3*(3), 192-201. doi:<http://dx.doi.org/10.1027/1016-9040.3.3.192>
- Rumbold, J. L., Fletcher, D., & Daniels, K. (2012). A systematic review of stress management interventions with sport performers. *Sport, Exercise, and Performance Psychology, 1*(3), 173-193. <http://dx.doi.org/10.1037/a0026628> Retrieved from <https://proxy.lib.utc.edu/login?url=https://search.proquest.com/docview/910939592?accountid=14767>
- Secades, X. G., Molinero, O., Salguero, A., Ruiz Barquin, R., de la Vega, R., & Márquez, S. (2016). Relationship between resilience and coping strategies in competitive sport. *Perceptual & Motor Skills, 122*(1), 336-349.
- Surujlal, J., Van Zyl, Y., & Nolan, V.T. (2013). Perceived stress and coping skills of university student-athletes and the relationship with life satisfaction. *African Journal for Physical, Health Education, Recreation and Dance, 19*(4:2), 1047-1059.
- The PSS Scale is reprinted with permission of the American Sociological Association, from Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*. 386-396.
- Verma, J. P., Bhukar, J. P., & Kumar, S. (2011) A study on stress stimuli among the students of physical education. *Journal of Physical Education and Sport. 11*(1). 48-55.
- Wilson, G. W. & Pritchard, M. P. (2005). Comparing Sources of stress in college student athletes and non-athletes. *Athletic Insight. 7*(1) 1-8.

Appendices

Appendix A

Administered Survey

1. What is your age? Please list below

- Age: _____

2. What is your gender?

- Male
- Female
- Transgender
- Self-identify: _____

3. What is your ethnic and racial background? Check all that apply.

- African-American, Black
- Chinese
- Filipino
- Indian
- Japanese
- Korean
- Southeast Asian
- White Caucasian -- Non-Hispanic
- Hispanic or Latino
- Mexican
- American Indian, Alaskan Native
- Middle Eastern
- More than one race

- Unknown or not reported
 - Decline to answer
4. Do you identify with any of the following? Please check all that apply.
- Straight
 - Gay
 - Lesbian
 - Bisexual
 - Self-identify: _____
5. What is your marital status?
- Married
 - Divorced
 - Widowed
 - Separated
 - Single
6. What is your class standing?
- Freshmen
 - Sophomore
 - Junior
 - Senior
 - Graduate Student
7. What is your Academic Department? (check all that apply)
- Accounting
 - Art

- Biology, Geology & Environmental Science
- Business Management
- Chemistry & Physics
- Civil & Chemical Engineering
- Communication
- Computer Science
- Electrical Engineering
- Engineering and Technology Management
- English
- Finance & Economics
- Health & Human Performance
- History
- Marketing & Entrepreneurship
- Mathematics
- Mechanical Engineering
- Modern & Classical Language and Literature
- Nursing
- Occupational Therapy
- Performing Arts
- Philosophy and Religion
- Physical Therapy
- Political Science & Public Service
- Psychology

- School of Education
- School of Professional Studies
- Social, Cultural & Justice Studies

8. How many hours of sleep do you get per night on average?

- a. <4
- b. 4-6
- c. 6-8
- d. 8+

9. Are you a college athlete?

- e. NCAA college sponsored athlete
- f. Club sport athlete
- g. I am not an athlete

10. How many academic hours (on average) do you take per semester?

- h. <12
- i. 12-15
- j. 15-18
- k. 18+

11. What is your GPA?

- l. < 2.0
- m. 2.0-2.4
- n. 2.5-2.9
- o. 3.0-3.4
- p. 3.5-4.0

Appendix B

COPE

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you generally do and feel, when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress.

Then respond to each of the following items by blackening one number on your answer sheet for each, using the response choices listed just below. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully, and make your answers as true FOR YOU as you can. Please answer every item. There are no "right" or "wrong" answers, so choose the most accurate answer for YOU--not what you think "most people" would say or do. Indicate what YOU usually do when YOU experience a stressful event.

1 = I usually don't do this at all

2 = I usually do this a little bit

3 = I usually do this a medium amount

4 = I usually do this a lot

1. I try to grow as a person as a result of the experience.
2. I turn to work or other substitute activities to take my mind off things.
3. I get upset and let my emotions out.
4. I try to get advice from someone about what to do.
5. I concentrate my efforts on doing something about it.
6. I say to myself "this isn't real."

7. I put my trust in God.
8. I laugh about the situation.
9. I admit to myself that I can't deal with it, and quit trying.
10. I restrain myself from doing anything too quickly.
11. I discuss my feelings with someone.
12. I use alcohol or drugs to make myself feel better.
13. I get used to the idea that it happened.
14. I talk to someone to find out more about the situation.
15. I keep myself from getting distracted by other thoughts or activities.
16. I daydream about things other than this.
17. I get upset, and am really aware of it.
18. I seek God's help.
19. I make a plan of action.
20. I make jokes about it.
21. I accept that this has happened and that it can't be changed.
22. I hold off doing anything about it until the situation permits.
23. I try to get emotional support from friends or relatives.
24. I just give up trying to reach my goal.
25. I take additional action to try to get rid of the problem.
26. I try to lose myself for a while by drinking alcohol or taking drugs.
27. I refuse to believe that it has happened.
28. I let my feelings out.
29. I try to see it in a different light, to make it seem more positive.

30. I talk to someone who could do something concrete about the problem.
31. I sleep more than usual.
32. I try to come up with a strategy about what to do.
33. I focus on dealing with this problem, and if necessary let other things slide a little.
34. I get sympathy and understanding from someone.
35. I drink alcohol or take drugs, in order to think about it less.
36. I kid around about it.
37. I give up the attempt to get what I want.
38. I look for something good in what is happening.
39. I think about how I might best handle the problem.
40. I pretend that it hasn't really happened.
41. I make sure not to make matters worse by acting too soon.
42. I try hard to prevent other things from interfering with my efforts at dealing with this.
43. I go to movies or watch TV, to think about it less.
44. I accept the reality of the fact that it happened.
45. I ask people who have had similar experiences what they did.
46. I feel a lot of emotional distress and I find myself expressing those feelings a lot.
47. I take direct action to get around the problem.
48. I try to find comfort in my religion.
49. I force myself to wait for the right time to do something.
50. I make fun of the situation.
51. I reduce the amount of effort I'm putting into solving the problem.
52. I talk to someone about how I feel.

53. I use alcohol or drugs to help me get through it.
54. I learn to live with it.
55. I put aside other activities in order to concentrate on this.
56. I think hard about what steps to take.
57. I act as though it hasn't even happened.
58. I do what has to be done, one step at a time.
59. I learn something from the experience.
60. I pray more than usual.

Appendix C

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

References

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often

4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly? 0 1 2 3 4
2. In the last month, how often have you felt that you were unable to control the important things in your life? 0 1 2 3 4
3. In the last month, how often have you felt nervous and “stressed”? ... 0 1 2 3 4
4. In the last month, how often have you felt confident about your ability to handle your personal problems? 0 1 2 3 4
5. In the last month, how often have you felt that things were going your way?..... 0 1 2 3 4

6. In the last month, how often have you found that you could not cope with all the things that you had to do? 0 1 2 3 4

7. In the last month, how often have you been able to control irritations in your life?

0 1 2 3 4

8. In the last month, how often have you felt that you were on top of things?

0 1 2 3 4

9. In the last month, how often have you been angered because of things that were outside of your control?..... 0 1 2 3 4

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? 0 1 2 3 4

Appendix D

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

1. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling?

_____ days per week

No vigorous physical activities → Skip to question 3

2. How much time did you usually spend doing **vigorous** physical activities on one of those days?

_____ hours per day

_____ minutes per day

Don't know/Not sure

Think about all the **moderate** activities that you did in the **last 7 days**. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

3. During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ days per week

No moderate physical activities → Skip to question 5

4. How much time did you usually spend doing moderate physical activities on one of those days?

_____ hours per day

_____ minutes per day

Don't know/Not sure

Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you might do solely for recreation, sport, exercise, or leisure.

5. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

_____ days per week

No walking → Skip to question 7

6. How much time did you usually spend walking on one of those days?

_____ hours per day

_____ minutes per day

Don't know/Not sure

The last question is about the time you spent sitting on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

7. During the last 7 days, how much time did you spend sitting on a week day?

_____ hours per day

_____ minutes per day

Don't know/Not sure

This is the end of the questionnaire, thank you for participating.

Appendix E

IRB Approval Letter



Institutional Review Board
Dept. 4915
615 McCallie Avenue
Chattanooga, TN 37403-2598
Phone: (423) 425-5867
Fax: (423) 425-4052
instrb@utc.edu
<http://www.utc.edu/irb>

MEMORANDUM

TO: Melanie Martin
Libby Byers **IRB # 17-073**

FROM: Lindsay Pardue, Director of Research Integrity
Dr. Amy Doolittle, IRB Committee Chair

DATE: 4/26/2017

SUBJECT: IRB #17-073: Comparing Stress Levels and Coping Styles in College Athletes and Non-athletes

The IRB Committee Chair has reviewed and approved your application and assigned you the IRB number listed above. You must include the following approval statement on research materials seen by participants and used in research reports:

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project # 17-073.

Since your project has been deemed exempt, there is no further action needed on this proposal unless there is a significant change in the project that would require a new review. Changes that affect risk to human subjects would necessitate a new application to the IRB committee immediately.

Please remember to contact the IRB Committee immediately and submit a new project proposal for review if significant changes occur in your research design or in any instruments used in conducting the study. You should also contact the IRB Committee immediately if you encounter any adverse effects during your project that pose a risk to your subjects.

For any additional information, please consult our web page <http://www.utc.edu/irb> or email instrb@utc.edu

Best wishes for a successful research project.

