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Introduction

In recent years, the mental health of college students has decreased in the United States, (American Psychology Association, 2013). Suicide is the second leading cause of death among college students; 1100 college students die of suicide each year (Wilcox, H. et.al, 2010). What is more concerning is that of the 20 million people currently enrolled in undergraduate and graduate programs in the United States, 12% have ideations of committing suicide at some point in their college career. That is 2.4 million students (Wilcox, H. et.al, 2010; Muniz, H., 2020).

Along with the normal stressors that come with being in college, student-athletes face a unique experience that creates an extra set of stressors. Student athletes worry about their performance in practices and games, daily training sessions, team/coach relationships, injuries, and time management, just to name a few. Psychologists Whitehead and Senecal (2020) claimed that "athletics programs are counterproductive to the higher educational aims of cultivating balanced growth and well-being in young adults" (p.150-151). The "balanced life" of a student is hard to attain when they are consumed with their sport, and this is one reason why researchers are seeing an increased number of student athletes suffering from more psychological problems such as anxiety, depression, fear of failure, alcohol abuse, disordered eating, and exhaustion (Maurer, T. and Roh, J., 2016). Participation in athletics doesn't always create negative outcomes. In fact, participating in a sport has shown to have protective factors over depression and suicidal ideation. Adolescent athletes have a 25% less chance of developing depression when participating in sport and a 12% less chance of idealizing suicide. Furthermore, at the biological level, endorphins-the happy hormone- increase with regular exercise creating a hormonal shift in the brain. Athletes have a higher sense of self-esteem and are more confident in other areas of their life such as the classroom and in social settings. A team atmosphere gives

athletes an increase of social support and feelings of belongingness. Combined, these factors create happier, healthier and more successful individuals (Babiss, 2009; Guddal, et al., 2019).

Although sport can provide positive experiences and outcomes for athletes, mental health trends are still disturbing. Thankfully, colleges and universities seem to be taking mental health seriously. There has been a steady increase of mental health services offered to students and student athletes such as counseling, mental health programming and events and even social media initiatives in an effort to aid students in whatever challenge they are facing (American Psychological Association). Even with all of these efforts, the trend continues to intensify from year to year.

College student athletes are not only more at risk because of their age and the mental health crisis in general, but also *because* they are student athletes (Gutiérrez-Cobo et. al, 2016). Findings suggest that college student athletes are less likely to use mental health services than their non-athlete peers. Athletes are trained to think stress is good and can be used as a motivator, so a lot of times an athlete's idea of "too much" stress is blurred. Universities and athletic departments impose barriers unintentionally by not being aware of services offered, or by not offering any services at all. The main reason why student athletes don't seek out help is because of the social stigma surrounding asking for help. Student athletes are supposed to be and viewed as strong and "mentally tough". By admitting that they need help, a student athlete feels weak and full of shame (Watson, 2003).

If student athletes are so hesitant to use mental health services, maybe the approach to mental health shifts away from conventional programming and to proactive programming to develop competencies that aren't related to these stigmas surrounding mental health as this might

be an easier way to reach this population. One route would be to use the construct of *Emotional Intelligence* (EI) instead.

The construct of EI is relatively new, first introduced in the 1990s. There are two main conceptualizations as to how to interpret EI: ability model and mixed model. The ability model focuses on a person's ability to interpret emotional information and use it to navigate their environment which was popularized by Salovey and Mayer (Salovey and Mayer, 2004). They define EI as the ability to perceive, understand, express and assimilate emotion, regulate emotions and recognize emotion in others. Viewing emotional intelligence through this lens allows us to see emotional intelligence as a skill set that can be taught. The mixed model is more of a holistic approach that takes into account a person's ability to do something, typical behaviors, and competencies (Bar-On, 2007). Bar-On defined emotional intelligence as an array of interrelated emotional and social competencies, skills and behaviors that impact intelligent behavior. The mixed model indicates that there is a certain level of ability that can be taught, but there are a number of factors such as personality, past experiences and typical behaviors, that influence one's emotional intelligence.

EI's relationship with various constructs is a popular line of study. Past findings have suggested a positive relationship between EI and overall well-being (Bar-On 2007; Alvarez, 2015; Moeller, 2020). Past findings suggest that higher levels of emotional intelligence are related with higher levels of physical and psychological health, effective coping mechanisms, lower levels of perceived stress, high levels of belongingness, and higher performance levels in school and in the workplace, which increases overall levels of well-being (Bar-On, 2007; Uruijo, Extremera, & Villa, 2015; Moeller, et al., 2020). Plainly put, higher emotional intelligence can allow for more positive experiences and overall health.

There are many studies that investigate the relationship between leadership, personality and age, but there seems to be a gap in the literature when examining EI's relationship with mental health. It is often assumed higher levels of EI are correlated with higher levels of mental well-being due to the numerous other positive outcomes associated with high levels of EI, but by looking at the literature, the relationship between emotional intelligence and mental well-being is not well known. In a broad sense, studies have shown that higher EI is related to higher "psychological" health. Brackett and Salovey (2004) found statistically significant negative correlations between EI and depression, Bar-on (2003) found a statistically significant positive relationship between EI and psychological health and Austin, et al. (2010) found a significant negative relationship between EI and stress. There is a gap in the literature in the relationship between EI and mental well-being as it pertains to college student athletes.

If a higher level of emotional intelligence is related with higher levels of psychological health, there should be a greater interest in finding ways to teach college student athletes the tools needed to increase their emotional intelligence. Through analyzing the relationships between student athletes' EI and mental well-being, one might see the effectiveness an EI developmental program might carry in the battle against mental health on college campuses. Research has suggested that training programs can be useful in the development of social and emotional competencies which can be measured through EI. The end goal of this study is to gain a sense of the general relationship between EI and mental well-being among student athletes while assessing the potential protective qualities EI may hold over low levels of mental well-being. This understanding could provide support for colleges and universities to implement programs to assist in the development of EI in their efforts to increase mental health across their campuses.

The purpose of this study is to investigate the relationship between emotional intelligence and mental well-being among college student athletes. The proposed study has three main research questions: 1) Is there a correlation between student athlete EI and their well-being; 2) Did student athlete mental well-being change over the course of the COVID-19 pandemic school year; 3) Did student athlete emotional intelligence change over the course of the COVID-19 pandemic school year?

Review of Literature

What exactly is mental well-being?

Mental well-being does not have a universally accepted definition because "mental well-being" looks and feels different for everyone. The World Health organization describes mental well-being as a state of well-being in which an individual realizes their own abilities, can cope with normal daily stressors, can work productively and contribute to their community or social circle (World Health Organization). Mental well-being depends heavily on the cognitive, behavioral and emotional responses of an individual. The WHO encourages us to look at mental-well-being on a continuum rather than something being present or absent. Some of these factors include an individual's motivation, culture or locus of control.

Many scholars are working towards the normalization that mental well-being and mental health are not the absence or presence of a mental illness. Cloninger (2006) shifts the conversation to positive and negative emotions rather than health and wellness. This study found that mortality and morbidity rates were strongly correlated with the absence of positive emotions, not the presence of negative ones. Galderisi (2015) has proposed a new definition of mental health that excludes any mention of mental illness: "a dynamic state of internal equilibrium

which enables individuals to use their abilities in harmony with universal values of society. Basic cognitive and social skills; ability to recognize, express and modulate one's own emotions, as well as empathize with others; flexibility and ability to cope with adverse life events and function in social roles; and harmonious relationship between body and mind represent important components of mental health which contribute, to varying degrees, to the state of internal equilibrium" (Galderisi, 2015).

Mental health crisis among college students

Literature has continued to show the increase in mental health concerns among college students in the past decade. A survey conducted by the American Psychology Association on the mental health trends across college campuses found that of the 400 universities that participated in this study, 95% of college counseling center directors said the number of students with significant mental health problems is a growing concern. Anxiety is the most prevalent among college students at 41.6% with depression not far behind at 36.4%. The directors reported that 21% of their students are classified under severe mental health concerns and 40% are classified under mild mental health concerns. This data supports the notion that there is a clear mental health crisis among college students at this current moment, and unfortunately it will not be slowing down (Mistler, B. et al. 2012; American Psychology Association, 2013). A study conducted in China found that levels of anxiety and depression are rising during the COVID-19 pandemic among young adults (Gao, 2020).

Bean (2021) aims to identify if there is a difference between postsecondary students who self-report anxiety and/or depression who use the on-campus counseling center and those who do not use the on-campus counseling center. 66% of college students stated mental health as the

most prominent issue they face on campus (National Association of Student Personnel Administration, 2014) and 86% of students with mental illness withdraw from their university before graduation. In this study, 15 students (7 non-users and 8 users) were identified to be a part of the representative sample. Each student participated in 3 sessions of interviews which were transcribed. The interviews were over the course of the fall semester with questions posed to find themes of anxiety, depression, coping strategies and their everyday behaviors. The findings show that there is minimal difference in a variety of aspects such as classes missed due to symptoms of anxiety/depression, GPA, healthy coping strategies, etc. between those who used the campus counseling services and those who did not. The biggest difference between these two groups was the difference in symptoms between the users and non-users. The non-users mentioned self-stigmatization of mental health services which resulted in feelings of dissociation of self-advocating and lack of motivation, which the users felt a sense of isolation and public stigmatization of the mental health services.

Belz et al. (2018) explored the risk for depression among high level athletes on German National and State teams. The main areas of interest were age, gender and performance level to see what protective factors, if any, exist and assess the well-being among Germany's athletes. Each athlete completed the Patient-Health Questionnaire which measures depression and the World Health Organization-5 to measure levels of subjective well-being (another measure for depression). Belz found that females were at higher risk for depression and experienced lower levels of psychological well-being and early adolescent athletes (younger than 18) experienced lower levels of psychological well-being compared to the 18–40-year-olds. Age and gender were found to be associated with risk for depression.

Suicide is the second leading cause of death in college students. Out of the 20 million graduate and undergraduate students attending college, about 1100 students die of suicide each year (Muniz, 2020). Because of this devastating statistic associated with the current mental health crisis, Wilcox, et al. (2010) conducted a longitudinal study over a four-year period at a large university where the prevalence and predictors of persistent suicide ideation, plans and attempts were recorded. 1253 first-year students were interviewed each year (4 interviews in total) about their personal lives and various aspects around their mental health. At the end of their four years, 12% of the individuals experienced suicide ideation (25% of those had more than one ideation episode). Ten individuals had a planned or attempted suicide during college. The risk factors for persistent suicide ideation that were identified included low social support, exposure to domestic violence, maternal depression and high self-reported depressive symptoms.

By viewing mental health as a foundation for overall well-being and the success of students, universities are emphasizing mental health programming and resources on campus. In a comparative study by Hunt and Eisenberg in 2010, it was found that only 20% of students with anxiety and mood disorders sought out help. There is a lack of evidence on how campus-level interventions, policies, and resources affect help seeking behaviors among students. Many campuses have adopted screening programs and stigma-reduction campaigns to battle the mental health crisis but there is limited literature that shows the effectiveness of these programs.

Along with the normal stressors that college students face, student athletes engage in an experience that creates extra stressors which can put them more at risk for mental health problems. A systematic review by Maurer & Roh (2016) evaluated the current literature as to whether athletes or non-athlete experienced more depression symptoms and what possible

negative stressors led to depression. Their findings showed that there was a higher number of student athletes suffering from anxiety, depression, fear of failure, alcohol abuse, disordered eating, and exhaustion than their non-athlete counterparts.

The COVID-19 pandemic has done nothing but heighten the mental health concerns among college student athletes. The National Collegiate Athletics Associations research in collaboration with the NCAA Sport Science Institute and the NCAA Division I, II and III Student-Athlete Advisory Committees conducted a survey among 25,000 current college student athletes about academic experiences and mental well-being (Johnson, 2020). It was found that mental health concerns were two times higher than "normal" or pre-pandemic times. Students who identified themselves as seniors, women, people of color or queer had more mental health concerns. Some commonalities between the responses to explain this phenomenon include barriers to sport participation, career planning concerns, mental exhaustion, anxiety, hopelessness, and feelings of being depressed. Another survey found that out of 6000 student athletes, 22% were clinically depressed and 68% were moderately stressed. On top of everything else athletes face on a regular basis, COVID has only increased anxiety and depression (Blau, 2020).

Sport experiences do not only create negative outcomes for athletes. Babbis (2009) found that adolescents who engaged in a sport were 25% less likely to develop depression and 12% less likely to have suicide ideations. Sport was found to be a protective factor against a decrease in mental health as it gives athletes a higher sense of self-esteem and an increase of social support. Physical activity naturally boosts endorphin levels, team atmospheres give athletes a sense of belongingness, and self-esteem allows students to be confident in other aspects of their life

(Guddall et al., 2019). Although sport participation can be beneficial to an individual, the explicit relationship between mental health and sport participation is unclear.

There has been recent criticism of institutions and their treatment of student athletes. Whitehead and Senecal (2020) claim that athletics programs, especially Division I programs, are counterproductive to the higher educational aims of cultivating balanced growth and well-being in young adults as the demands placed on student athletes' minds and bodies is extreme. Instead of emphasizing the athlete as a person and addressing their health, environment, and personal development, Division I institutions are 'using' their athletes. Whitehead and Senecal said "that the athlete must perform so that the arena can be built, places the needs of the arena first" when the arena should be in service to the athlete. The arena could be the literal arena, or the athletic department as a whole.

Student athletes are not utilizing mental health services, but why? Moreland, Coxe and Yang (2018) conducted a systematic review to answer this question of conceptualizations, operationalizations, facilitators, and barriers student athletes face when seeking mental health help. At the time of this study, 31% of male and 48% of female NCAA student-athletes reported either depression or anxiety symptoms. They have an increased risk for eating disorders, substance abuse, gambling addictions, sleep disturbances, mood disorders, and suicide. Compared to their non-athlete peers, student athletes are less likely to report that they have sought out mental health services. All of this is because of the stigma around mental health and gender and peer norms play into it. For student athletes, asking for help is seen as a weakness. In a world where athletes should be the strong ones, this poses a problem to their perceptions of self and others on their teams. Athletes often hold a win-at-all-costs mentality and are trained to think stress is good (Watson, 2003). This stigma is causing athletes to suppress their thoughts, feelings

and emotions which is related with low psychological well-being (Kwoon & Kim, 2019). Other barriers include, athletic departments not being aware of other services offered by the university, the university not even offering services, and team commitments creating a limited schedule for athletes. As a solution, Moreland et al. propose that partnerships between the NCAA, athletic administrators and coaches with their student athletes should be deepened to break this stigma and facilitate a culture of mental well-being.

Creating physical interventions, such as counseling sessions, can be problematic for student athletes as the stigma and limited schedule can hinder student athletes' use of these services. Neyer (2001) proposes a social cognitive model where the student athletes' academic, athletic, and personal needs are addressed through active mentoring and reflective journal writing. There is less of a stigma surrounding these activities and could positively impact the mental health of student athletes.

Conceptualizations of EI

There are many ways to interpret and define emotional intelligence, but there are two main theories as to how to conceptualize EI. According to the *ability model,* emotional intelligence is the ability to perceive, understand, express and assimilate emotion, regulate emotions and recognize emotion in others (Mayer, Salovey, & Caruso, 2000; Mayer & Salovey, 1997). This model focuses on a person's ability to interpret emotional information and use it to navigate their environment (Salovey and Mayer, 2004). Having an ability does not necessarily mean a person will utilize it but viewing emotional intelligence through this lens allows emotional intelligence to be viewed as a skill set that can be taught. The main criticism surrounding the ability model is that its conceptualization is too broad. The definition of EI can

be whatever the researcher deems appropriate since it has the potential to encapsulate a variety of emotion, thought and cognitive processes. This makes its conceptualization ever changing depending on the purpose of the study (Daus, 2005).

Within the ability model, there are different ways to test for EI. One common form is the *performance-based ability model.* This model assesses EI through performance tests as well as a kind of intelligence that is based on a set of emotional aptitudes. Using this model gives EI a narrower cognitive conceptualization, mitigating its chance for criticism by reviewers. One example is the Mayer, Salovey & Caruso Emotional Intelligence Test (MSCEIT, 2002).

The *mixed model* is a holistic approach that considers a person's ability to do something, typical behaviors, and competencies. This model defines EI as "a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands" (Bar-On, 2006). The mixed model says there is a certain level of ability that can be taught, but there are several factors such as personality, individual experiences and environment that influence one's emotional intelligence. The mixed model is used most often in corporate settings in HR and consulting offices to train staff to be more emotionally intelligent. The criticism of the mixed model stems from the fact that personality and EI are interlinked in this conceptualization. Personality is its own construct, and when there is overlap between constructs, it's hard to discern the utility one construct possesses over the other and how they impact each other (van Zyl, 2012).

Petrides, Furnham & Siegling (2015) propose to use the *trait model* for conceptualizing emotional intelligence. The trait model is the intersection of self-perceived emotions in an individual's personality and is unrelated to human cognition altogether. Bhatt (2016) said that

"trait EI is the only operational definition in the field that recognizes the inherent subjectivity of emotional experience" since each individual possesses their own set of traits. There is debate over which personality model best aligns with the explanation of EI using the trait model, but the most common is the Five Factor Model, or the Big Five which include openness, neuroticism, conscientiousness, agreeableness and extraversion. The main critique of the trait model is that it measures personality more than emotional intelligence (Pretrides, 2011).

Positive outcomes associated with EI

There is a great deal of literature that supports the idea that high amounts of EI positively correlate to higher levels of physical and psychological health, effective coping mechanisms, positive social interactions, and higher performance levels in school and in the workplace, which increase overall levels of well-being (Bar-On, 2007). Higher EI has also been correlated to leadership (Nafukho, et al., 2016), higher levels of belongingness (Moeller, et al., 2020), effective coping mechanisms and lower levels of stress (Austin, et al., 2010), lower levels of perceived stress (Uruijo, Extremera, & Villa, 2015) and higher levels of life satisfaction (Alvarez, et al., 2015). Additionally, individuals with high levels of emotional intelligence are less vulnerable to psychological disorders as they are able to recognize, regulate and handle emotions appropriately (Mavroveli, 2007). These positive outcomes are due to the social and emotional competencies that come with high levels of emotional intelligence.

In a study focused on emotional intelligence and well-being factors in physical education at the high school level, Méndez-Giménez & García-Romero (2019) found that among their participants, EI related to lower physiological stress responses which allowed for successful psychological skill usage and more successful athletic performance. This implies that athletes

with higher emotional intelligence can potentially perform better. In their research, it was found that performance-based ability EI is positively related with efficiency in hot cognitive tasks, or emotionally laden tasks but not with cool tasks which are not considered emotionally taxing.

It is clear that emotional intelligence can have an overall positive impact, but Brackett, Mayer and Warner (2003) wanted to see how EI impacts everyday behaviors. 330 undergraduate students took the MSCEIT (EI measure), the Life Spaces Scale (measure of aspects of an individual's surroundings), the Big Five (personality test) and the College Student Life Space Scale. Overall, lower levels of EI were associated with larger amounts of alcohol, illegal drug use and deviant behavior with statistically significant correlations to set apart males from females. Findings suggest that there were high correlations between gender and EI as predictors of life spaces. This implication emphasizes the role gender plays in the analysis of EI and its relationship with other constructs.

Recently, Moeller, et al. (2020) explored the relationship between emotional intelligence and psychological well-being among liberal arts college students. Each participant completed the Depression Anxiety Stress Scale to measure levels of anxiety and depression, the General Belongingness Scale and the Trait Meta Mood Scale to measure emotional intelligence. EI helps with social functioning and an aspect of social functioning is a sense of belonging. An individual's sense of belonging impacts psychological well-being so it was not surprising that students with higher levels of EI experienced higher levels of belongingness, which was associated with lower mental health problems.

Learning through experiences

Experiential learning is the idea that knowledge is created through the transformation of experience. It puts an emphasis on staying in the moment and is often viewed as a cycle of experience, reflection and action (Beest, Bemmel, and Adriaansen, 2018). In a study among senior undergraduate students as they were completing a senior year practicum, Abe (2011) found that positive emotions contribute to successful experiential learning by expanding the thought-action response. Each student kept a reflective journal of thoughts, feelings and emotions which were assessed. Abe found that higher levels of emotional intelligence contribute to successful experiential learning by fostering reflective capabilities.

Empathy is a cognitive attribute that involves an understanding of another's feelings, which is a component in some emotional intelligence models. Beest et al. (2018) created an experiential learning opportunity to improve nursing students' empathy. Each participant became a patient for a day and reflected on their experiences by answering a series of open-ended questions. From their responses, it can be inferred that knowledge, in this case empathy, was created through the transformation of their experience showing the impact of experiential learning.

Teaching EI

Because of the overall benefits emotional intelligence carries, organizations are investing more time and money into emotional intelligence training interventions for their students and employees. Nafukho (2016) held a training workshop for 38 organization leaders from around the world in hopes of increasing EI. Each participant took the EQ-i (Bar-on's measure) at the beginning and end of the workshop. Each leader received professional coaching where feedback

was given, and individual strategies were discussed. At the end of the five days, every participant had an increase in their EQ-i scores, but the permanence of this EI change is not known.

Literature around EI training among college students is sparse. Gilar-Corbí (2018) created a program for university students with the goal of increasing levels of EI. The participants were split up into three groups with three different teaching environments: online, in classroom and coaching. Each participant took the EQ-i before and after their training. Although all participants experienced an EI increase, the coaching group showed to have the largest increase in EQ-i scores. It was hypothesized that the element of experiential learning in the teaching-learning process allows for real world transfer of knowledge making it the most effective teaching environment.

Emotional intelligence training programs among athletes is a new concept, but mindfulness training programs are not. Higher levels of mindfulness are associated with greater emotional intelligence, positive affect and life satisfaction (Schutte, 2011). Ajulchi et al. (2019) proposed that EI could be enhanced through mindfulness training. 30 male amateur basketball players were split into two groups, with only one of the groups receiving a mindfulness training program. The Mindfulness Sport Performance Enhancement (MSPE), Mindful Sport Performance Questionnaire, Mental Toughness Questionnaire and Self-Related EI Scale were taken by each participant before and after the program. The athletes that engaged in the mindfulness program showed significantly higher EI and mental toughness scores than the athletes that did not receive mindfulness training.

Methodology and Results

Subject description

The sample in this study is a convenience sample of student athletes, who participate at the National Collegiate Athletic Association (NCAA) Division III level at a residential, liberal arts institution. This study only asked for responses from current first year, sophomore and junior athletes. Of the total sample, there were 144 first years, 124 sophomores and 87 juniors who participated in the present study; 209 participants identified as male and 145 as female. At this institution, 12 teams are men's teams and 14 are women's teams.

To answer the first research question, a total of 476 responses from student athletes were used. This number is the total number of cases from completed surveys in the fall of 2020 and spring 2021, so N=476 indicates the number of cases. In order to answer research questions 2 and 3 only participants who took the measures twice, pre and post tests could be used. This shrunk the sample size down to N=122. This sample contained 50 first years, 43 sophomores and 29 juniors; 70 identified as male and 51 identified as female.

The Institutional Review Board (IRB) at the host institution approved the present research. The researchers contacted all of the 16 coaches of the varsity teams via email on two occasions to solicit study participants. Coaches were contacted for the initial pretest in September 2020 and recontacted so that they could encourage student athlete participation for the posttest in April 2021. The initial email informed the coaches of the nature of the research with the link to the survey on Qualtrics. The authors requested that they share this email with their student athletes and encourage their participation in the study. The students were incentivized to participate in the present study with a chance to win a gift card. Throughout the three-week response collection period, the authors had in person follow ups, sent two reminder emails spaced out by one week and asked the athletic director to send additional encouragement to coaches and athletes in order to gain optimal engagement.

Instrumentation

The survey consisted of 42 items with three sections: demographics, AES and WHO-5. It began with an informed consent question and a series of force answered demographic questions. These questions gathered information such as sport team, class year and the last 4 digits of their student identification number from each student athlete. The AES and WHO-5 assessments followed.

The World Health Organization Well-Being Index (WHO-5) was approved for use in scholarship by the World Health Organization. The WHO-5 self-report scale measures the current, subjective mental well-being of an individual (World Health Organization) with questions such as "Over the past two weeks... I have felt cheerful and in good spirits" on a 6-point likert scale. The total score is calculated by adding up the 5 responses. The WHO defines mental well-being through a sociocultural lens in a general sense but see it on a continuum. This is why the score is a percentage. The WHO-5 is especially unique in that it is only 5 items. According to Bonnin, et al. (2017), the WHO-5 has an internal consistency of .83 and found that the test-retest reliability was .83. According to Topp, (2015), the measure has a mean sensitivity of 86%. Mean sensitivity is the measure's ability to accurately and correctly identify the proportion of true mean responses of the construct being measured, in this case well-being.

Because the WHO-5 is only 5 items, many are skeptical of its ability to accurately measure mental well-being, but through a systematic literature review, the WHO-5 has shown to be sensitive and specific in screening for depression and applicable across various fields of study (Topp, 2015). Because of this, the WHO-5 is most often used to measure depression. Its other

main point of measure is for an author's definition of 'well-being" (Gao, 2020; Ando, 2019). Many think it is too specific towards depressive disorders (Belz, et al., 2018), but for the purpose of this study and since it is not framed to the participants around depression, the scores should give a good indication of overall mental well-being of student athletes.

The author has received permission from Nicola Schutte to use her AES (Assessing Emotions scale) survey instrument free of cost for this study. This measure is based on Salovey and Mayer (1990)'s original ability model of EI, stating that EI is the ability to perceive, understand, express and assimilate emotion, regulate emotions and recognize emotion in others. This original definition consists of what would today be considered trait and ability models. More recently, Salovey and Mayer have shifted away from trait EI and are arguing for a pure ability model (Schutte, 2009). Because Schutte's measure is rooted in this original definition, the AES attempts to measure trait and ability EI. This makes the AES different from other measures as these two models are commonly seen as mutually exclusive (Schutte, Malouff, & Bhullar, 2009).

The AES is a 33-item self-report measure on a 5-point likert scale that asks participants to reflect on themselves and their normal behaviors through a series of questions such as "I know when to speak about my personal problem to others". The total score is calculated after reverse scoring questions 5, 8 and 33 and summing up the 33 responses. A high score is considered to be 137 and above, signifying high levels of emotional intelligence and low scores, 111 and below signify low levels of emotional intelligence. According to Meyer and Fletcher (2007), the AES has an "adequate internal consistency reliability (r=.87 to .90)" and according to Schutte et al. (1998) the AES had a test-retest reliability of .78. Internal consistency reliability is the gage for how well a measure is accurately measuring a construct, in this case, EI. The test-retest reliability

is the consistency of the measure to reproduce the same results multiple times which is important in the justification of a measure's use (Bar-on, 2007). The AES is used under a wide variety of research when measuring EI and its relationship to other constructs.

A common critique of the AES is that it is a self-report measure. This leaves room for false answers, skipping questions, or quickly going through the measure to complete it. Social desirability bias is a response bias seen in survey respondents. Participants want to be positively viewed by the researcher or by peers, so tendencies to overestimate their good qualities/behaviors/thoughts and underestimate their bad ones is common (Graeff & Kempf-Leonard, 2005). The survey was set up so that all of the responses and participants were left anonymous which mitigates the chance of the participant subscribing to the social desirability bias. In this research, the participants are up for a random selection of a gift card but were asked by their coaches to fill out the survey. There was not an incentive to cheat as the data was not being used for selection, merit pay, etc. Additionally, the participants know the author and wanted to aid in the success of this study. All of these circumstances combined motivation to falsely fill out the AES should not be observed.

Data Cleaning and Missing Data

<u>Pretest Data</u>

The pretest sample was originally N=432. The number of first year, sophomore and junior varsity athletes at the present institution is 448. This yields a response rate of 96%. Of that initial number, 108 cases were removed as the extent of missing data was too great leaving N=324. The cases removed were missing 100% of the AES and/or WHO-5. Within the remainder of the sample, there were eleven cases where one item on the AES was not answered and one case in

which one item on the WHO-5 was not answered. Total scores were still calculated with missing

values, so the researcher had to decide how to handle the missing data. A full summary of the

missing data can be found in Table 1.

Table 1

PreTest Missing Values Summary

	Missing N	Percent	Valid N
AES 5	3	0.7%	321
AES 16	2	0.5%	322
AES 4	1	0.2%	323
AES 6	1	0.2%	323
AES 28	1	0.2%	323
AES 29	1	0.2%	323
AES 30	1	0.2%	323
AES 31	1	0.2%	323
AES 1	0	0.0%	324
AES 2	0	0.0%	324
AES 3	0	0.0%	324
AES 7	0	0.0%	324
AES 8	0	0.0%	324
AES 9	0	0.0%	324
AES 10	0	0.0%	324
AES 11	0	0.0%	324
AES 12	0	0.0%	324
AES 13	0	0.0%	324
AES 14	0	0.0%	324
AES 15	0	0.0%	324
AES 17	0	0.0%	324
AES 18	0	0.0%	324

AES 19	0	0.0%	324
AES 20	0	0.0%	324
AES 21	0	0.0%	324
AES 22	0	0.0%	324
AES 23	0	0.0%	324
AES 24	0	0.0%	324
AES 25	0	0.0%	324
AES 26	0	0.0%	324
AES 27	0	0.0%	324
AES 32	0	0.0%	324
AES 33	0	0.0%	324
WHO 2	1	0.2%	323
WHO 1	0	0.0%	324
WHO 3	0	0.0%	324
WHO 4	0	0.0%	324
WHO 5	0	0.0%	324

With these cases, the researcher decided to use the mean of that item to fill in the missing data. Assuming these values are missing at random, there is a low chance for a bias to occur. Additionally, the AES is on a 5-point Likert scale, so the degree of variability is small. The final score could only be impacted by, at most, 5 points for each missing item. Using mean substitution has its advantages: it is considered conservative as the mean distribution does not change, and with missing values, the mean is considered the best guess. Shrive et al. (2006) found that mean substitution provided means and standard deviations that were close to those of multiple imputation, the more preferred mode of dealing with missing data. In some cases, mean substitution performed better than multiple imputation. There are some drawbacks to using mean substitution, the main being that the variance of the item is reduced as "the mean is closer to

itself than to the missing value it replaces" which ultimately reduces the correlation the variable may have (Tabachnick, 2013).

The researcher assessed the pre-test data for univariate and multivariate outliers. Extreme outliers were eliminated as they would impact the data analysis and its interpretation. To address the univariate outliers, z-scores were generated for the variable of total AES scores. Per the three-sigma rule, standardized scores greater than 3.29 are considered to be a univariate outlier (Tabachnick and Fidell, 2013). There were no univariate outliers identified in the pretest sample. The multivariate outliers were found using the p-value of the right tail of the chi-squared distribution with the equation [1-CDF.CHISQ (probablilty_MAH_1, df)], or the Mahalanobis distance. According to distance around the centroid of the multivariate space, the probability variables less than .001 are considered to be multivariate outliers (Tabachnick and Fidell, 2013). One case was identified (p=.00053) and eliminated.

Four participants took the survey more than once. The last recorded response was deleted. After removing the cases with 100% missing data, 2 non-consenting cases and the univariate and multivariate outliers, the pretest sample was n=318.

Posttest Data

The posttest sample was originally N=267. The number of first year, sophomore and junior varsity athletes at the present institution is 448. This yields a response rate of 60%. Of that initial number, 80 cases were removed as the extent of missing data was too great, leaving N=187. There were 5 cases in which one item on the AES was not answered, one case in which 7 of the items were not answered (21% of the entire measure) and 1 case in which one item on the WHO-5 was not answered. A full summary of the missing data can be found in Table 2.

Table 2

Posttest Missing Values Summary

	Missing N	Percent	Valid N
AES 25	2	1.1%	185
AES 14	1	0.5%	186
AES 15	1	0.5%	186
AES 18	1	0.5%	186
AES 21	1	0.5%	186
AES 22	1	0.5%	186
AES 23	1	0.5%	186
AES 24	1	0.5%	186
AES 26	1	0.5%	186
AES 27	1	0.5%	186
AES 28	1	0.5%	186
AES 1	0	0.0%	187
AES 2	0	0.0%	187
AES 2	0	0.0%	187
AES 4	0	0.0%	187
AES 5	0	0.0%	187
AES 6	0	0.0%	187
AES 7	0	0.0%	187
AES 8	0	0.0%	187
AES 9	0	0.0%	187
AES 10	0	0.0%	187
AES 11	0	0.0%	187
AES 12	0	0.0%	187
AES 13	0	0.0%	187
AES 16	0	0.0%	187

AES 17	0	0.0%	187
AES 19	0	0.0%	187
AES 20	0	0.0%	187
AES 29	0	0.0%	187
AES 30	0	0.0%	187
AES 31	0	0.0%	187
AES 32	0	0.0%	187
AES 33	0	0.0%	187
WHO 2	1	0.5%	186
WHO 1	0	0.0%	187
WHO 3	0	0.0%	187
WHO 4	0	0.0%	187
WHO 5	0	0.0%	187

The researcher used the same method to handle the missing data by using the mean of that item. Outliers were also assessed using the same method as the pre-test data. There was 1 univariate outlier identified having a z-score higher than 3.29 (z=3.58) and was eliminated. Using the Mahalanobis distance, 3 multivariate outliers were identified (p=.00017, p=.00037 and p=.00060) and eliminated. Ten participants took the survey more than once, and consistent with the pretest data, the last recorded response was deleted. There were 25 cases that reported they were seniors, resulting in the deletion of the case as seniors were not a part of this study. After removing the cases with 100% missing data, seniors, non-consenting cases and the univariate and multivariate outliers, the posttest sample was n=158.

Linear Regression

In order to address the first research question, the relationship between the AES and WHO- 5 scores of all respondents ($N = 476$) were analyzed using a linear regression. Time is not a variable in this relationship, and in order to show a clear correlation between the two variables, the maximum number of participants were used in this data analysis. This is why the pretest sample ($N = 318$) and posttest sample ($N = 158$) were combined. Of this sample, 144 participants were first years, 124 were sophomores, 87 were juniors; 145 identified as female and 209 as male.

Linear regression is a data analysis tool that assesses the relationship between two variables. It also allows estimations to be made for how the dependent variable changes as the independent variable changes through the equation of the best fit line. Four assumptions must be made when using linear regression: (1) the error size does not change across the independent variable, (2) there are not hidden relationships between the individual cases (3) the data collected follows a normal distribution and (4) the relationship between WHO-5 scores and AES scores is linear. Table 3 shows the descriptive statistics associated with this sample. Through running the linear regression, a scatter plot, Pearson's Correlation Coefficient, regression line and regression equation are produced. Figure 1 shows the graph associated with the relationship between student athletes AES and WHO-5 scores.
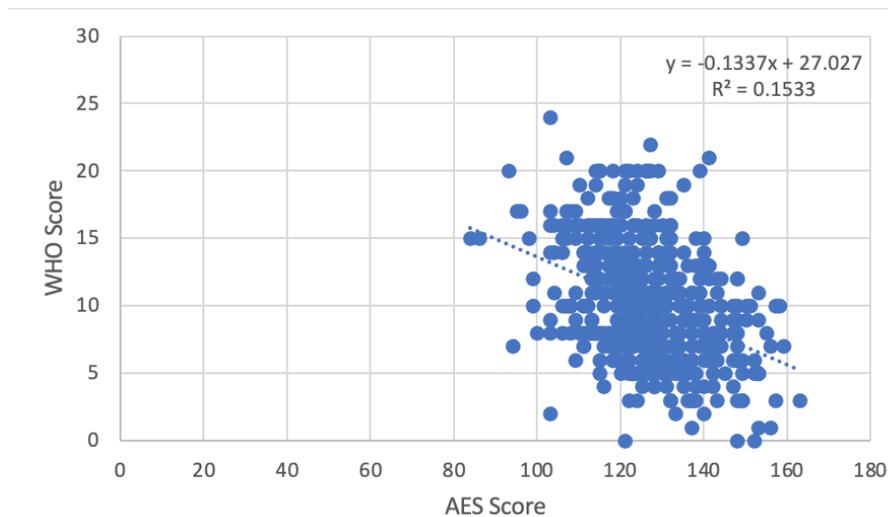
Table 3

Descriptive statistics for sample used to answer research question #1

N	AES Mean	AES SD	WHO-5 Mean	WHO-5 SD
476	126	13	10	4

Figure 1

Student athlete AES scores vs WHO-5 scores. This figure illustrates the relationship between student athlete AES and WHO-5 scores.

As indicated in Figure 1, the R squared value is 0.153 ($p < 0.0$) which indicates the percentage of the variation in the WHO-5 scores that is due to the linear relationship between WHO-5 scores and AES scores. In other words, 15.3% of the variation in the present study's WHO-5 scores are attributed to the relationship between the WHO-5 and AES scores. A moderate negative relationship was found ($r = -.329$) between WHO-5 scores and AES scores among college student athletes. The regression line (y=-0.13x+27.03) shows that WHO-5 decreases by .133 points for a 1-point decrease in AES.

Paired Samples t-Test

In order to look at the relationship over time to answer research questions 2 and 3, only the data from participants that took both the pretest and posttest assessments (N = 122) were used. Many participants only took the pretest or posttest assessments so there is only data from a time 1 or a time 2. Those cases could not be used and were deleted before running the appropriate data analysis test.

A paired samples *t*-test was used to answer the questions of change in EI and well-being scores over the course of the year. The purpose of a paired samples *t*-test is to find statistical significance between paired cases that the mean differs from zero. Two important statistics are produced: (1) a *t* statistic which shows the difference represented in units of standard error and (2) a *p* value to show any present significance. Paired *t*-tests require two measurements taken from the same individual (kent.edu, n.d.). In the present study, WHO-5 and AES scores were measured twice, once in the fall of 2020 and once in the spring of 2021.

During this school year, WHO-5 scores statistically significantly decreased by 2 for student athletes on average (t=-5.89; p=0.000). On the contrary, AES scores were not statistically significantly different for student athletes (t=0.42; p=0.673).

Discussion

The primary aim of this study was to learn more about the relationship between student athlete levels of mental well-being and emotional intelligence. The mental health crisis among college students has been getting worse in the last decade (American Psychology Association, 2013). Student athletes face additional stressors that make them more susceptible to poor mental health. More and more student athletes are dealing with anxiety, depression, exhaustion, eating disorders and alcohol abuse (Maurer & Roh, 2016). The COVID-19 pandemic has only

amplified mental health concern among this population as seasons were lost and social interactions were diminished (Johnson, 2020). Although institutions are allocating resources toward mental health services for their students, student athletes are not using them. The main reason for this is centered around the stigma of mental health and how it would be perceived by peers, coaches, parents, teammates, etc (Watson, 2003).

There is a gap in the literature around the relationship between mental well-being and emotional intelligence, and it is even more sparse when it comes to the subpopulation of student athletes. EI increases an array of social and emotional competencies that have been found to attribute to this increase in well-being. If student athletes are hesitant to utilize the conventional services offered to them, an alternative approach through the development of emotional intelligence could be a solution.

Past findings have found that emotional intelligence is positively related to positive experiences including higher levels of overall well-being (Bar-On 2007; Moeller, 2020). Seeing that mental well-being is encapsulated in the construct of overall well-being, this trend was expected to be seen in the present study. This was not the case; in fact, the Pearson's Correlation Coefficient value shows a moderate negative relationship between WHO-5 scores and AES scores among college student athletes (r= -.329; $p < 0.00$) implying that students with higher emotional intelligence have lower levels of mental well-being.

This is a contradictory finding to common conceptions and previous findings of EI and mental well-being. Student athletes that have high emotional intelligence scores (above 137) are very good at perceiving, understanding, regulating and recognizing emotion in themselves and in others and can effectively cope with daily demands. Due to this acute awareness of self, others and the environment, these individuals have the ability to internalize all of the emotions they feel

as well as empathize with the emotions of their peers. If these emotions are negative, this additional burden could potentially be detrimental to their mental health.

This data was collected in the fall of 2020 and the spring of 2021 as student athletes were living through the COVID-19 pandemic. The institution allowed for students to come back and live on campus as long as rules were followed. Athletics were reworked to create as much normalcy for student athletes, but many teams lost entire seasons or played modified seasons without the possibility of a NCAA championship. Their sport experience is central to their identity and overall college experience; COVID completely changed the way athletes' college lives looked. Practice and game schedules changed by the day (and sometimes by the hour), extra meetings and mandatory COVID testing were required. Team numbers changed depending on COVID cases and contact tracing. Athletes endured the possibility of being put in quarantine or catching the virus and were placed under extreme regulations to ensure a safe season. Many had to sacrifice spending time with friends outside of their team or going to school events to mitigate risk, but this resulted in an even less 'normal' experience than their non-athlete counterparts. Johnson 2020 found that student athletes were twice as likely to experience a decrease in mental health during the pandemic than during pre-pandemic times.

Athletics were not the only thing that COVID-19 drastically changed; the college campus was entirely different than previous years. During the first semester, many classes were remote or 'hybridized', a combination of remote and in person. Very few campus events were held due to fear of an on-campus outbreak. Per the university's guidelines, students were not permitted to leave campus unless for essentials such as groceries, off campus visitors were not permitted on campus, and room guests were limited or banned depending on COVID cases which significantly decreased the amount of human interaction students were receiving. Elmer 2020 found that

spending less time in social settings or large groups and relying more on digital communication over the internet (FaceTime, Zoom, GoogleMeet, etc.) is associated with depression. The second semester had more in-person classes, conference play for varsity teams and loosened up some of the aforementioned restrictions, but the campus feel was very similar.

Researchers have found that we are experiencing a "societal COVID burnout". Burnout occurs when "you have reached your limits mentally, emotionally, and physically" and "coping with a pandemic can feel overwhelming and exhausting and leave you feeling drained or anxious" (Queen, 2020). Students were suffering from COVID burnout throughout the year as their college lives were anything but normal. Emotionally intelligent people recognize emotions in others and empathize with them. Since the overall feel of campus was generally negative, it should not be a surprise that those with high emotional intelligence are affected by it. Being in this type of environment for an extended amount of time is not healthy for anyone, but emotionally intelligent people may suffer more since they are in touch with their own emotions and the emotions of others.

Individuals who have high levels of emotional intelligence are able to identify their emotions better than those with low levels of EI. The low WHO-5 scores of those with high emotional intelligence does not necessarily mean these individuals are dealing with anxiety and depression, although this measure has been found to be an accurate measure of depression (Topp, 2015). High levels of emotional intelligence help individuals adapt to challenging situations and experience fewer negative symptoms of stress and depression (Singh, 2021). Lea (2019) found that emotionally intelligent individuals tend to have high levels of perceived stress and react more strongly to stressors, but they recover more quickly than those with lower levels of EI. This

same trend might be occurring with the participants of this study where the perception of being unwell measured by the WHO-5 doesn't accurately describe the mental state of the individual.

For a person who is struggling with mental health, a more emotionally intelligent person can accurately identify it since they are aware of their thoughts, feelings and emotions. The identification of an emotion or feeling of being mentally unwell is the first step in increasing mental health but being able to confront and treat the problem(s) is an entirely different struggle. This implication encompasses one of the principle ongoing issues in the battle of mental health-the stigmatization. Only 20% of students with anxiety and mood disorders engaged in conventional counseling services, even though institutions have increased mental health initiatives and services (Hunt and Eisenberg, 2010). Social norms imply that student athletes must be strong and use their emotions as motivators, poor mental health is viewed as a weakness. The stigma around mental health reaches outside of the athletics sphere, but it is especially impactful for athletes in how they conceptualize mental health.

Aside from the relationship between EI and mental well-being, the researcher was also interested in how the mental well-being of student athletes changed over the course of the traditional school year. The WHO-5 scores were found to be statistically significantly different from responses in fall 2020 to spring 2021 (t=-5.89; p=0.000), which implies that mental well-being is decreasing with time. This finding supports previous literature that mental health among college students, specifically student athletes is decreasing (Mauer & Roh, 2016; Wilcox, 2010). On average, scores decreased by 2 points from the fall to the spring. The WHO-5 is out of 25 points, so it is clear that a 2-point difference can be impactful. No one knew how long this pandemic would last and although the second semester offered a little more normalcy to students than the first, students (along with the rest of the world) were exhausted. This finding also

implies that universities' efforts in increasing campus wide mental health are failing. Lastly, this further solidifies the implications from the first research question surrounding COVID burnout.

The final research question sought out how EI changed over the course of the year. AES scores were not statistically significantly different for student athletes (t=0.42; p=0.673) from fall 2020 to spring 2021. Past findings suggest that there are a few factors, such as age, genetics and childhood experiences that can influence a person's EI level, but it is thought to be a fairly stable indicator (Chamorro-Premuzic, 2013). The findings of the present study are consistent with previous research. There is support that EI levels can be improved through various training programs, but unless an individual dedicates time to learning and maintaining a high level of EI, it can deteriorate (Nafukho, 2016; Gilar-Corbí, 2018).

Study Limitations

The researcher was originally a research assistant for an ongoing project that used the instrumentation and data from the present study. Research questions were formed after seeing the type of data and measurements being utilized. Because of this, the conceptualizations of EI and mental well-being were under the guise of what the AES and WHO-5 measure. Although both instruments have good validity and reliability, the researcher would have wanted to use a more extensive measure for well-being as five questions cannot encompass the complexities and accurate levels of mental well-being among student athletes.

Ideally the entire student athlete population at the present institution would participate in the pre and posttests of this study. There was considerably more engagement in the fall of 2020 than the spring of 2021. This could be attributed to the fact that every sport -aside from winter sports- were participating in regular or modified seasons at the time of the posttest data

collection. The schedules of the athletic director, student athletes and coaches were very busy which could influence the amount of engagement from student athletes, further emphasizing that students and institutions don't prioritize mental health in stressful times. Getting in contact with coaches was more difficult in the spring than it was in the fall, especially as the responses were collected in April which is the peak of regular conference play.

Future Research

The results for the first research question were unexpected, but based on the results of the present study, it is clear that further research needs to be conducted. With the current data set, further investigation should be used to locate the mechanisms behind these results. Using an ANOVA analysis, it would be of interest to see if/which demographics impact an individual's EI and mental well-being levels. Additional areas of future exploration will be needed if a common theme is found. Additionally, retesting this population over the course of the following years would show a larger scope of the proposed impact COVID-19 had on the mental health of college student athletes. It would give insight to the relationship between EI and mental well-being and support or oppose the present findings. It would also be interesting to see the results of the present study from a normal school year that is not disrupted by a pandemic causing additional stressors.

Mental well-being is a broad term, so it would make sense for future studies to look at the relationships between EI and anxiety/depression among college student athletes as these mental health disorders are the most prevalent among this population.

The original thought was that social and emotional competency programs could be implemented as a way for student athletes to increase mental well-being as they are not utilizing

conventional mental health services. Generally, further research should continue to find ways to improve and prioritize mental health for student athletes outside of the confines of conventional services and breaking the stigma around mental health. It would still be interesting to see the impact emotional intelligence training would have on this population's levels of well-being, seeing that a vast majority of previous literature has found EI training to improve levels of mental health (Ajilchi, 2019; Bar-On, 2007).

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