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Athletic Identity and Emotional Regulation in Adolescents

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Abstract

The ability to regulate emotion is necessary for adolescents to cope with everyday stressors and major life events. Sports participation has been linked positively to the ability to cope and regulate emotion. Athletic identity is a concept that has been linked to anxiety, burnout and lower academic performance; its relationship to emotion regulation had not yet been researched. This paper reviews the literature on athletic identity, sports participation, coping ability and emotional regulation. The current study examines the link between sports participation and athletic identity in youth and their ability to cope with stress and regulate their emotions. One hundred and seventy two rural, Midwestern high school students participated in the study. Athletic identity was correlated positively with emotion regulation. Sports participation was positively linked with emotion regulation. Clinical implications of the research, limitations, and suggestions for future studies are discussed.

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Athletic Identity and Emotional Regulation in Adolescents

Sports participation provides numerous personal growth opportunities for an individual For example, individuals who participate in sports report benefits such as higher self-esteem, higher educational status and better psychological health (Bowker, 2006; Darling, Caldwell, & Smith, 2005; Gardner, Roth, & Brooks-Gunn, 2008). In addition, sports participation has been linked to having and utilizing a more sophisticated repertoire of coping and emotional regulation strategies (Dugdale, Eklund, & Gordon, 2002; Giacobbi & Weinberg, 2000; Lane, Beedie, Devonport & Stanley, 2011).On the other hand, athletic identity has been linked to both positive (e.g., low anxiety) and negative outcomes (e.g., poor academic performance; Martin & Horn, 2013). The relationship between athletic identity and the ability to regulate emotions has not been investigated to our knowledge. Thus, the link between athletic identity and emotion regulation will be the primary focus of the study. This paper begins with a review of the literature followed by the results of a study which aimed to examine the association between athletic identity and emotion regulation while controlling for other relevant variables (e.g., coping style, sports participation).

Sports Participation and Athletic Identity

Participation in high school sports reached an all-time high of 7.7 million in the academic year 2012 to 2013, an increase of 21,057 from the 2011 to 2012 school year (National Federation of State High School Associations, 2013). Illinois had the fourth highest participation rate (339, 944 students; National Federation of State High School Associations, 2013). Educators often assert that sports participation has a positive effect

on students; however, we know relatively little about whether participating in sports plays a role in the development of emotion regulation.

Numerous studies have linked sports participation and high self-esteem (Bowker, 2006; Harrison & Narayan, 2003; Slutzky & Simpkins, 2009). One such study by Harrison & Narayan (2003) found a positive association between sports participation and healthier self-image. Additionally, sports participation was linked to lower emotional distress (Harrison & Narayan, 2003). Prolonged and consistent participation in sports also has been linked to higher motivational beliefs among adolescents (Simpkins, Vest, & Becnel, 2010). Individuals who participated in sports in elementary school were not only more likely to participate as adolescents and also believed themselves to be more capable (Simpkins, Vest, & Becnel, 2010). Sports participation has been linked to lower dropout rates among middle school and high school students (Mahoney & Cairns, 1997) and higher educational status (i.e., college attendance) in young adulthood (Mahoney, Cairns, & Farmer, 2003). Perceived self-competence in adolescence and interpersonal competence in young adulthood is associated with youth sports participation (Donaldson & Ronan, 2006; Mahoney, Cairns, & Farmer, 2003).

Several studies have found a positive relationship between overall adolescent adjustment (i.e., grades, attitude toward school, academic aspirations, psychological health) and sports participation as well (Darling, Caldwell, & Smith, 2005; Donaldson & Ronan, 2006; Gardner, Roth, & Brooks-Gunn, 2008; Fredericks & Eccles, 2006; Peck, Roeser, Zarrett, & Eccles, 2008). More specifically, vulnerable youth (i.e., those who report poor mental health, poor school motivation, and risky family, peer, and school circumstances) who participate in organized sports (school and club) have more

educational success than vulnerable youth who are not engaged in sports (Peck, Roeser, Zarrett & Eccles, 2008). However, less research has considered the emotional regulation and coping skills of individuals who participate in sports.

Although numerous studies have examined outcomes for youngsters who participate in sports, more recently, the literature in this area has focused on more specific sports-related issues, such as athletic identity, or the extent to which an individual views herself/himself as an athlete (Brewer, Van Raalte & Linder, 1993). It involves a cognitive process that helps athletes organize information about themselves to develop an overall identity (Brewer, et. al., 1993). Yopyk and Prentice (2005) view athletic identity as a type of social identity that can be associated with conflicting stereotypes. For example, male college-athletes; as college students, they are assumed to be intelligent and academically motivated. However, their identity as an athlete may lead others to assume that they lack intelligence and academic motivation. Individuals who are high in athletic identity may attribute much of their self-worth to their successes and failures as an athlete (Martin & Horn, 2013). These individuals can become one-dimensional in their self-identity in comparison to peers who engage in various extracurricular activities (Martin & Horn, 2013). Brewer, Van Raalte, & Linder (1993) developed the Athletic Identity Measurement Scale (AIMS) that assesses four dimensions: self-identity, social identity, exclusivity, and negative affectivity. Self-identity is the individual's view of him or herself as an athlete (Brewer, Van Raalte & Linder, 1993). Social identity is the perception of how others view the individual as an athlete (Brewer, Van Raalte & Linder, 1993). Exclusivity is how strongly an individual emphasizes his or her identity of being an athlete and how weakly he or she values other aspects of identity (Brewer, Van Raalte

& Linder, 1993). Negative affectivity is how strongly an individual reacts to not being able to participate in his or her chosen sport (Brewer, Van Raalte & Linder, 1993). Their initial study, using athletes and non-athletes, yielded a one-factor model. However, subsequent research using only collegiate male soccer players yielded a 3-factor structure: social identity, exclusivity, and negative affectivity (Brewer, Boin, & Petitipas, 1993).

As noted previously, athletic identity has yielded both positive and negative outcomes for athletes. For example, athletic self-identity correlates negatively with anxiety, but athletic negative affectivity is linked positively to anxiety (Masten, Tusak, & Faganel, 2006). If an athlete scores high on negative affectivity, then she/he would react strongly to not being able to participate in sports. In this study, the athletes higher in negative affectivity experienced higher levels of anxiety (Masten, Tusak, & Faganel, 2006). Athlete burnout has been associated with higher levels of negative affectivity and social identity (Martin & Horn, 2013). Athletic self-identity has been connected positively to risky sport behavior, such as over-training and playing through an injury (Brewer, Van Raalte, & Linder, 1993; Martin & Horn, 2013). Risky sport behavior can lead to physical and emotional exhaustion which can lead to burnout (Martin & Horn, 2013). Research shows that faculty members and non-athlete students view college student-athletes as less intelligent, more likely to skip class, and more likely to receive special treatment from tutors and professors (McHugh Engstrom,, & Sedlacek, 1991; McHugh Engstrom, Sedlacek, & McEwen, 1995). When participants in a study are primed with the identity as an athlete vs. a scholar-athlete (i.e., explicitly asked to identify whether they are an athlete versus scholar-athlete), participants who were

assigned the scholar-athlete condition performed more poorly on an academic achievement test than did athlete condition (Harrison, Stone, Shapiro, Yee, Boyd, & Rullan, 2014; Stone, Harrison, & Mottley, 2012; Yopyk & Prentice, 2005). This was especially among participants who were African-American and female college athletes (Harrison, Stone, Shapiro, Yee, Boyd, & Rullan, 2014; Stone, Harrison, & Mottley, 2012). Some researchers (Stone, et al., 2012; Harrison, et al., 2014) have theorized that athletes perform poorer due to the activation of the "dumb-jock" stereotype associated with their athletic social identity; more specifically, how faculty members and traditional students view them in the role of an athlete.

In sum, sports participation has been linked positively to self-esteem, academic success, and psychological health. In contrast, the little research available on athletic identity has associated it with anxiety, athlete burnout and poor academic performance. To our knowledge, whether there is a relationship between athletic identity and the level (i.e., varsity, club, elite or professional) and duration (i.e., hours spent playing and number of years) of sports participation has not been examined. This paper will now review the literature on emotional regulation as well as emotional regulation and sports.

Emotional Regulation

The ability to regulate emotions has been conceptualized as influencing which emotions one experiences and when and how these emotions are experienced (Gross, 1998). Gratz and Roemer (2004) defined emotion regulation as (a) cognizance and comprehension of emotion; (b) acceptance of emotions; (c) the ability to refrain from behaving impulsively and instead behave so that one may achieve desired goals when feeling negative emotions; (d) the capacity to use emotional regulation strategies

adaptively to control emotional responses in an effort to meet individual goals as well as the requirements of the situation. Gratz and Roemer (2004) developed the Difficulties in Emotional Regulation Scale based on this model. Both their model and their scale have become widely accepted and were, therefore, used for the proposed research. It should be noted that the DERS focuses on emotion dysregulation; however, the child and adolescent literature tends to focus on emotion regulation, so that term will be used in this review.

The development of emotional regulation is an ongoing process for a youngster. An individual's ability to regulate emotion and the manner in which she/he regulates emotion changes throughout his or her lifespan (Cole, 2014). As infants develop, their behaviors (i.e., seeking eye contact and crying) are reflective of a growing understanding of communication. Expecting a response from another indicates that infants have a basic understanding that their caregivers may be able to change their negative feeling states (Kopp, 1989). The transition away from complete reliance on their caregiver for emotion regulation also begins in infancy. Children learn from their caregivers that they can intentionally alleviate discomfort by engaging with objects (i.e., toys) that are interesting to them (Kopp, 1989).

As toddlers, children experience an increase in self-awareness, which leads them to perceive themselves as *objects and agents* (Piaget, 1952, 1954). This perception helps toddlers comprehend the idea that they can feel distress but also helps them understand that their actions (initiating and maintaining activities) can help them feel better or worse (Kopp, 1989). Toddlers also become more aware of the *causes* of emotional distress and

the use of emotional regulation strategies that are aimed at altering or removing these causes to protect the self (Kopp, 1989).

A strategy change for specific emotions can be seen throughout early, middle, and late adolescence (Zimmerman & Iwanski, 2014). Seeking social support for fear, sadness, and anger is less commonly used by middle adolescents than early or late adolescents (Zimmerman & Iwanksi, 2014). Middle adolescents suppress fear and tend to blame others when angry (Zimmerman & Iwanksi, 2014). These changes may explain why Soto and colleagues (2011) found an increase in emotional instability and neuroticism in adolescence, especially during middle adolescence. Silk and colleagues (2003) found an increased rate of psychopathology during middle adolescence as well.

Lacking any or all of these components may be indicative of problems with emotional regulation (Gratz & Roemer, 2004). Deficits in the ability to regulate emotions efficiently have been linked to various problems. For example, adolescents who struggle to handle negative emotions are more likely to engage in relational aggression (i.e., spreading rumors, excluding a peer, or threatening to withdraw friendship) and physical aggression (i.e., pushing, shoving, or hitting) towards their peers (Sullivan, et. al., 2010). Additionally, not regulating emotions has also been linked to an increase in internal symptomology (i.e., anxiety and depression; Kim-Spoon, Cicchetti, & Rogoschm 2013; Perez, Venta, Garnaat, & Sharp, 2012; Weinberg &Klonsky, 2009). More specifically, Perez and colleagues (2012) found that adolescents on an inpatient unit who had been diagnosed with a depressive or an anxiety disorder also reported difficulties with emotion regulation.

Sports Participation and Emotional Regulation. Emotional regulation strategies are commonly employed by athletes during sports participation. Although there is not extensive research on the subject of emotional regulation and sports participation, a few studies exist. An investigation of emotional regulation of Olympic athletes revealed that athletes choose specific emotion regulation strategies to abide by the "professional" behavioral expectations of their organization and strategies that may help them attain greater performance outcomes (Wagstaff, Fletcher, & Hanton, 2012). In sports, there are instances when the long-term benefits of an unpleasant emotion outweigh the short-term benefits of pleasant emotions; for example, runners often believe that emotions such as anger and anxiety might enhance their performance (Lane et al., 2011). Thus, unpleasant emotions may be useful for athletes, and they will regulate their emotions accordingly (Lane, Beedie, Devonport & Stanley, 2011). Tamminen and Crocker (2013) found that athletes who played on a team sport were aware of their emotions and the potential impact of those emotions on their teammates. Athletes report that they self-regulate their emotions so that their teammates were not negatively impacted (Tamminen & Crocker, 2013). For example, the Skip, or captain, of a women's Olympic curling team reported she controls her anger by keeping a "stone cold face" (p. 741), focusing on play and controlling her body language so as to not throw off her teammates (Crocker & Tamminen, 2013). In addition to coping styles, emotion regulation has not been studied in conjunction with athletic identity. Again, as with coping ability, continued sports participation and *participation* at the competitive level is associated with more opportunities for an athlete to develop and utilize emotional regulation strategies which can be used outside the sport context (Wagstaff, Fletcher, & Hanton, 2012). Continued

participation and competitive participation is linked to individual being more invested in athletics and their role as an athlete, or their athletic identity (Brewer, Van Raalte & Linder, 1993).

Coping

In order to understand the link between emotional regulation and sports participation, it is first necessary to understand the relationship between sports participation and other relevant variables like coping. Many researchers consider emotional regulation and coping to be a part of the same stress management process (Watson & Sinha, 2008). Lazarus (1993) conceptualized coping as the process of using cognitive and behavioral strategies to modulate internal and/or external psychological stressors. In his model, coping is divided into two broad categories: problem-focused and emotion-focused coping. Problem-focused coping involves attempting to change the situation that is responsible for the stress; whereas, emotion-focused coping involves attempting to change the experience of the negative emotion stemming from the stressor. Problem-focused coping can include planning, direct action, seeking help, waiting before taking action, and screening out other activities. Emotion-focused responses can include denial, positive reinterpretation of the situation and seeking out social support (Carver, Scheier, & Weintraub, 1989). Carver and colleagues asserted that the coping process is too complex to be completely encompassed by two strategies. In response, they developed the COPE, which has 15 distinct coping subscales covering both functional and dysfunctional strategies. It has been theorized that individuals choose coping strategies based on familiarity and situational circumstances (Carver, Scheier, & Weintraub, 1989). In effort to minimize testing time, Carver and colleagues (1997)

developed the Brief COPE. The Brief COPE is comprised of 14 subscales comprised of two items each making for a total of 28 items (Carver, 1997). Factor analysis revealed three-factor model. The 14 distinct scales of the Brief COPE map onto three factors: problem-focused coping (six items), active emotion-focused coping (16 items), and avoidant coping (six items) (Horwitz, Hill, & King, 2011). For the purpose of data reduction, the three-factor model was used in this study.

A youngster's coping abilities develop gradually over time and are affected by environmental factors. An infant has very few coping strategies on which to rely, and therefore often looks to the caregiver for aid in coping (Zimmer-Gembeck & Skinner, 2011). Infants also use repetitive behaviors to soothe themselves (e.g., thumb sucking or stroking) (Zimmer-Gembeck & Skinner, 2011). Preschool-aged children use more instrumental strategies such as self-soothing by snuggling with their favorite blanket, distracting themselves with a task they enjoy, leaving the stressful situation, or seeking help from someone else (Baumgartner & Strayer, 2008; Zimmer-Gembeck & Skinner, 2011). School-aged children begin using more cognitive strategies (i.e., cognitive awareness and self-talk) and seeking social support (Eschenbeck, Kohlmann, & Lohaus, 2007; Neitzel & Stright, 2003; Zimmer-Gembeck & Skinner, 2011). Adolescents develop more sophisticated cognitive coping strategies such as planning, coordinating multiple strategies, and continuing to use previously learned strategies, but they also utilize avoidance (Donaldson, Prinstein, Danovky, & Sprito, 2000; Eschenbeck, Kohlmann,& Lohaus, 2007; Zimmer-Gembeck & Skinner, 2011)

When an individual experiences negative emotions, avoidant coping has been linked to risky behavior and poor impulse control in adolescents (Cooper, Wood, Orcutt

& Albino, 2003). Risky behavior includes sexual behavior, substance use, delinquency, and educational underachievement (Cooper, Wood, Orcutt & Albino, 2003). Adolescents who use negative coping strategies are more likely to develop Post Traumatic Stress Disorder (PTSD) after being exposed to violence and more likely to develop severe PTSD symptoms than adolescents who use more positive coping strategies (Dempsey, 2002; Springer & Padgett, 2000). Depression and anxiety also have been linked to the use of negative coping strategies following exposure to violence (Dempsey, 2002).

Sports Participation and Coping. Sports participation provides individuals with the opportunity to develop coping strategies (Yang, et. al., 2010). Athletes report the use of a variety of functional coping strategies (e.g., accepting the situation, increasing effort, and planning) regardless of whether the stressor is expected or unexpected (Dugdale, Eklund, & Gordon, 2002; Giacobbi & Weinberg, 2000). However, athletes may select a dysfunctional strategy (e.g., denial and behavioral disengagement) over a functional one (e.g., planning and effort) if it is more beneficial for the situation at hand (Giacobbi & Weinberg, 2000). An athlete who is consistently playing well but makes a single mistake or has one bad performance may utilize humor or denial to cope because it is more beneficial for the athlete to not focus heavily on the one bad performance (Giacobbi & Weinberg, 2000). On the other hand, an athlete who is not consistently performing well and experiences frustration would use functional coping strategies such as active coping, planning, or increasing effort to in order to address their performance issues (Giacobbi & Weinberg, 2000).

The benefits of sports participation have been documented to last into adulthood. Yang and colleagues (2010) found that sustained general physical activity and sports

participation in adolescence was associated with less job strain in early midlife. They theorized that physical activity and sports participation help an individual develop psychological characteristics that aid in coping with job stress in adulthood. Youth athletes must develop coping strategies to handle the pressures of performing well, to meet the expectations of coaches, teammates and parents, as well as deal with possible sports-related injuries (Yang, et. al., 2010). Participating in a sport at a higher level (i.e., on a varsity high school team or an elite club team) and participating for an increasing number of years provides an individual more opportunities to develop and practice coping strategies (Masten, Tusak & Faganel, 2006). Additionally, continuing to participate and participating at a higher level would indicate that an individual is more invested in athletics and strongly identifies him or herself in the role of an athlete (Brewer, Van Raalte & Linder, 1993).

The ability to cope is a skill that is developed and honed throughout life. Difficulties with coping have been linked to concepts such as poor psychological health and risky behavior in adolescents. In contrast, sports participation has been shown to have a positive association with coping lasting into adulthood. However, the relationship between athletic identity and coping is unknown. In addition emotional regulation and coping, this study will also examine the potential link between athletic identity and coping.

Current Study and Hypotheses

The primary goal of this study was to examine the relationship between athletic identity and emotional regulation. The available literature showed a positive relationship

between sports participation and emotional regulation and coping. Thus, this study was expanded to include athletic identity.

Furthermore, much of the research on sports participation compared athletes and non-athletes or compared athletes to other athletes rather than viewing participation dimensionally (Simpkins, Vest, & Becnel, 2010). By doing so, the variability of sports participation (i.e., duration, frequency and type of sport) was not captured. The limited research including sports participation variability shown significant differences based on these concepts (Donaldson & Ronan, 2006; Gardner, Roth & Brooks-Gunn, 2008; Harrison & Narayan, 2003; Simpkins, Vest, & Becnel, 2010). More specifically, Gardner, Roth and Brooks-Gunn (2008) found that individuals who participated at a higher intensity and for a longer duration reported higher educational and occupational success in young adulthood than those who played at a lower intensity and played for a shorter duration.

Our main hypothesis examined the relationship between athletic identity and emotional regulation. It was hypothesized that that athletic identity would predict emotion regulation, even after controlling for relevant variables. The first set of variables included demographics: age and sex. Previous research has shown age and sex differences for emotion regulation for youngsters. For example, children in early adolescence (ages 11-14) and late adolescence (18-20) had been shown to have lower scores of emotional dysregulation and use more emotional regulation strategies than children in middle adolescence (ages 15-17) (Zimmerman & Iwanski, 2014). Additionally, males have lower emotional dysregulation scores than females (Neumann, van Lier, Gratz & Koot, 2010; Weinberg & Klonsky, 2009). The second set of variables

included internalizing symptoms (depression and social anxiety), which have been correlated positively to emotional dysregulation (Kim-Spoon, Cicchetti, & Rogoschm 2013; Perez, Venta, Garnaat, & Sharp, 2012; Weinberg &Klonsky, 2009); this set of variables will help document that the link between athletic identity and emotion regulation is not attributable to internalizing problems. The next variable controlled for was coping. Previous research has shown that higher levels of effective coping are linked to lower levels of emotional dysregulation (Alberts, Schneider, & Martijn, 2012; Sullivan, Helms, Kliemer & Goodman, 2010; Watson & Sinha, 2008). Therefore, it was hypothesized that 2 of the 3 factors of the COPE inventory (i.e., Active Problem-Focused Coping and Active Emotion-Focused Coping) would have a negative relationship with emotional dysregulation. In contrast, we hypothesized that avoidant coping would positively predict emotional dysregulation. Sports participation was the next variable; previous research had found a positive relationship between participation and emotion regulation (Lane, Beedie, Devonport & Stanley, 2011; Wagstaff, Fletcher, & Hanton, 2012). Thus, it was anticipated that sports participation would negatively predict emotional dysregulation. Finally, it was hypothesized that athletic identity would negatively predict emotional dysregulation, even after controlling for the prior variables.

Method

Participants

The sample consisted of 172 high school students, ages 14 to 19 years, enrolled at a rural central Illinois public high school. The data from all 172 participants was kept except for two cases. Participant 87 did not provide any responses for the AIMS questionnaire. Participant 106 left six responses blank on the DERS and was therefore

excluded from analysis. Participants were recruited from the physical education and health classes. 54.1% of the participants ($N = 93$) were female and 43.6% ($N = 75$) were male. Four participants did not answer. Of the 172 participants, 82.6% were White, 5.8% were two or more races, 4.7% were Black/African American, 3.5% were Hispanic/Latino, 1.7% were Asian, and 1.2% Native Hawaiian/other Pacific Islander. One participant did not answer. As an incentive, participants were entered into a drawing to win one of five $25 Amazon gift cards.

Procedure

Researchers first obtained consent from the high school principal. Next, the first author spoke with the students in physical education and health courses. Students were given a parent consent form which had to be returned to their physical education or health teacher prior to the day of data collection. After collecting the consent forms, a participant list was compiled. On the day of data collection, the students that had returned a parent consent form were excused from their physical education or health class to complete the packet of questionnaires in a designated classroom. The first author read the directions for each questionnaire and read the questions aloud. Researchers (first author and undergraduate assistant) were available to answer questions if participants needed clarification. A child assent form was obtained the day of testing. Participants completed a packet of paper-and-pencil questionnaires. The measures were counterbalanced to control for order effects.

Measures

Demographics. The demographic form included questions about age, sex, and ethnicity. Sports participation and general physical activity was evaluated as part of the

demographics. Participants indicated whether they participate in any of the sports specified at each level of play (i.e., for fun/exercise, club team, or school team). Participants also indicated the amount of hours they play per week ("none," " less than 1," "1-3 hours," "4-6 hours," "7+ hours") as well as the frequency ("none," "1-2 times a week," "3-4 times," "5-6 times," "7+ times"). Using the sport they have played the longest, participants indicated how many years they have played ("less than 1," "1-3 years," "4-6 years," "7+ years," "never played a sport"). If a participant no longer plays a sport, then he or she was asked to indicate how many years he or she played the sport. Finally, participants were asked to provide any other information about their exercising habits or sports play they deem important.

Athletic Identity Measurement Scale. Athletic identity was assessed using the Athletic Identity Measurement Scale (AIMS) (Brewer & Cornelius, 2001). The AIMS is a 7 item, self-report measure. Using a 7-point Likert scale ("strongly disagree" to "strongly agree"), the AIMS measures the extent to which an individual identifies as an athlete. A higher score indicates a stronger and more exclusive view of his or her identity as an athlete. The subscales include: exclusivity (2 items; "Sport is the most important part of my life."), social identity (3 Items; "I consider myself an athlete."), and negative affectivity (2 Items; "I feel bad about myself when I do poorly in sport."). The AIMS has adequate convergent validity in that it has positive associations with measures of the perceived importance of sport competence, sport-related competitiveness, and level of sport involvement (Brewer & Cornelius, 2001). Non-significant associations between the AIMS and constructs like self-esteem, sport skill level, and tendency to respond in socially desirable manner provide evidence of discriminate validity (Brewer & Cornelius,

2001). An overall internal consistency of .81 and test-retest reliability of .89 (over a 14-day period) has also been reported for the AIMS (Brewer & Cornelius, 2001).The calculated Cronbach's alphas for the AIMS were as follows: AIMS, α = .96; Social identity α = .93; Negative Affinity α =.86; Exclusivity α= .95.

Difficulties in Emotion Regulation Scale. Emotional regulation ability was evaluated using the Difficulties in Emotion Regulation scale (DERS; Gratz & Roemer, 2004). The DERS is a 36-item, self-report measure with six distinct subscales as well as a total score. Using a 5-point scale (almost never, sometimes, about half the time, most of the time, almost always), the DERS assesses clinically relevant difficulties in emotion regulation. Higher total scores are indicative of greater difficulty with emotional regulation, or emotional dysregulation. The subscales include: Nonacceptance of Negative Emotional Responses (six items; "When I'm upset, I feel guilty for feeling that way."), Difficulties Engaging in Goal-Directed Behavior When Distressed (five items; "When I'm upset, I have difficulty concentrating."), Impulse Control Difficulties (six items; "When I'm upset, I feel out of control."), Lack of Emotional Awareness (six items; "I am attentive to my feelings."), Lack of Emotional Clarity (five items; "I have no idea how I am feeling."), and Limited Access to Effective ER Strategies (eight items; "When I'm upset, I believe that I'll end up feeling very depressed."). The DERS has demonstrated good test-retest reliability over a period of four to eight weeks in a sample of 357 college students (Gratz & Roemer, 2004). Gratz & Roemer (2004) reported that the overall internal consistency of the DERS to be .93 and all subscales to have a Cronbach's α >.80. There is also support for the predictive and construct validity of the DERS scores within clinical and nonclinical populations (Fox et al., 2007; Gratz &

Roemer, 2004). Cronbach's alphas were calculated for the scale: DERS, α =. .88; Nonacceptance of Negative Emotional Responses, α = .89; Difficulties Engaging in Goal-Directed Behavior When Distressed, α = .88; Impulse Control Difficulties, α = .89; Lack of Emotional Awareness, α = .83; Lack of Emotional Clarity, α = .89.

Brief COPE Inventory. Coping was assessed using the Brief COPE Inventory (BCI; Carver, 1997). The Brief COPE is a multidimensional coping inventory consisting of 28 items. In order to assess the ways in which individuals respond to stress, they indicate how often they utilize each coping strategy using a 4-point scale ("not at all," "a little," "usually," "a lot"). The Brief COPE consists of 14 distinct scales. There is not, however, an overall coping score for this measure. For the purpose of data reduction, a factor analysis of the subscales was performed in previous research (Horwitz, Hill, & King, 2011). The three factors were *Active Problem-Focused Coping* (six items; "I've been trying to come up with a strategy about what to do."), *Active Emotion-Focused Coping* (16 items; "I've been learning to live with it."), and *Avoidant Coping* (six items; "I've been refusing to believe that it has happened."). Carver (1997) found all 14 scales to have an alpha reliability of α =.50 or greater with only three scales falling below .60 (Venting, Denial, and Acceptance). Cronbach's alpha for this study were as follows: Brief COPE, α =.79; Avoidant Coping, α =.54; Active Problem-Focused, α =.78; Active Emotion-Focused Coping, α =.61.

Center for Epidemiologic Studies Depression Scale for Children. Depression was evaluated using the Center for Epidemiologic Studies Depression Scale for Children (Weissman et al., 1980). The CES-DC is a 20-item self-report depression inventory (e.g. "I felt down and unhappy.") Scores range from 0 to 60. Items are scored using a 4-point

scale (0= "Not at all", 3 = "A lot"). Higher overall scores indicated higher levels of depression. An internal consistency coefficient of 0.74 was found for the overall scale (Tatar, Kayiran, Saltukoglu, Ozbut, & Emeksiz, 2013). Tatar and colleagues (2013) reported that the criterion validity correlation coefficients for the CES-DC was between 0.52 and 0.74 when tested against other depression screening tools which included: Beck Depression Inventory, Zung Self-Rating Depression Scale, Hospital Anxiety and Depression Scale and Automatic Thought Questionnaire, and Children's Depression Inventory. The Cronbach's alpha for the CES-DC was α =.84 for this study.

Liebowitz Social Anxiety Scale- Child Adolescent versions. Social anxiety was assessed using the Liebowitz Social Anxiety Scale-Child Adolescent versions**.** (Liebowitz, 1987). The LSAS-CA is a 24-item social anxiety inventory ('Being the center of attention;" "Speaking up at a meeting.") The items of the LSAS-CA are meant to assess the fear aspect of social anxiety (i.e., fear of social interaction, fear of performance, overall fear) and avoidance behaviors (avoidance of social interaction, avoidance of performance, overall avoidance). Both the subscales and the total scale have shown high internal consistency (α = .90-.97) and high test-retest reliability (intraclass correlation coefficient = 0.89-0.94) (Masia-Warner et al., 2003). The Cronbach's alphas were calculated for this study. Results were as follows: Total fear, α = .94; Total Avoidance, α = .93; Fear of Performance situations, α = .90; Fear of Social situations, α = .90; Avoidance of Performance situations, α = .86; Avoidance of Social Situations, α = .87.

Data Analysis

A hierarchical multiple regression analysis was used to test our primary hypothesis. . Step 1 investigated demographics as a predictor of emotional regulation. Step 2 investigated symptomology (i.e., depression and anxiety) as a predictor of emotional regulation. Coping ability was added to the regression model for step 3. Sports participation was added to the model in step 4. Step 5 used Athletic Identity as a predictor for emotional regulation while controlling for all other variables. The order of predictors was chosen in line with the preexisting literature on emotional regulation. As described previously, there is an abundance of research linking demographics and internal symptomology to emotional regulation. Coping has also been linked to emotional regulation. Although there is research on sports participation and emotional regulation, this research is limited. Researchers aimed to expand on this subject. The predictor-outcome relationship between athletic identity and emotional regulation was the main focus of this study.

Results

Descriptive statistics were calculated including: means, standard deviations, ranges, and internal consistency values (α). Next, correlations were used to examine links between the main study variables. A hierarchical stepwise multiple regression equation tested the effect of the main study variable, athletic identity, while controlling for all other variables.

Descriptive Statistics

Data was investigated for missing responses and outliers. Within the dataset, there were no significant outliers. The skewness and kurtosis values for each main study variable were all within acceptable range.

Cronbach's alphas were calculated for all individual scales in the study. All alphas were acceptable except for the Avoidant Cope subscale, $\alpha = .54$. This was not consistent with previous literature which found no issue with the Avoidant Cope Subscale (Horwitz, Hill, & King, 2011). All other scales ranged from $\alpha = .61$ (Emotion Focused Cope) to $\alpha = .97$ (LSAS-CA) (see table 1). Means, standard deviations and ranges are reported in Table 1. For this sample, the LSAS-CA subscales total fear and total avoidance had a mean of 20.58 and 19.02, respectively. This was well above the means reported by Masia-Warner and colleagues (2003) who found the means of a similar sample to be 10.5 (total fear) and 8.1 (total avoidance). However, this was only slightly higher than previous literature in which the total fear and total avoidance subscales had a mean of 19.2 and 17.3, respectively (Storch et al., 2006). Of the 172 participants, 118 (Male = 39, Female = 118, did not provide gender = 4) had a total score that met or exceeded the clinical cut-off of 22.5 (Masia-Warner et al., 2003).

Gender and ethnicity differences were examined. Hypothesis 1 predicted that males would have less difficulty regulating their emotions (i.e. lower emotional dysregulation scores). An independent-samples t-test indicated that DERS scores were significantly higher for females (M = 91.96, SD = 25.95) than for males (M = 81.48, SD = 21.86), $t(164) = -2.77$, $p < .01$. Therefore, hypothesis 1 was supported. Due to the sample being majority White, an independent samples t-test was run to examine differences between White participants and minority participants. Results indicated there was not a significant difference in DERS scores between white participants and minority participants.

Additionally, descriptive statistics of the AIMS items revealed that item 3 ("Most of my friends are athletes.") had the highest mean score, M = 4.94, SD = 2.17. Item 5 ("I spend more time thinking about sport than anything else.") had the lowest mean score, M = 3.17, SD = 2.26. Using a 7-point likert scale, 56.7% of participants chose 5 and up for item 1 which indicated a high athletic identity for that AIMS scale item. The percentage of participants who scored themselves as having high athletic identity on the remainder of the AIMS items were as follows: item 2 (52.6%), item 3 (61.4%), item 4 (40.4%), item 5 (31%), item 6 (47.3%), and item 7 (43.8%). Of the 171 participants who completed the AIMS, 45% (N = 77, Female = 35, Male = 39, did not provide gender = 3) had a total score of 35 or more, indicating they had an overall high athletic identity.

Descriptive statistics of sports participation showed that 92.4% (N= 159) had participated in sports for "fun or exercise" in the last 12 months. However, this large percentage could be reflective of the school's physical education requirement. In the last 12 months, 62.2% of participants (N = 107) indicated they had played a sport for a club team; 40 participants indicated they were single sport athletes while 67 participants indicated they were multisport athletes. Basketball (N = 46), Baseball (N = 33), football (N = 32), track and field (N = 30) and "other sport" (N = 24) had the highest number of participants for club sports. 64.6% (N= 113) of participants indicated they had played on a school sports team in the last 12 months. Of that 64.6%, 50 participants indicated they played one sport while 63 participants indicated they were multisport athletes. Basketball (N = 40), track and field (N = 36), football (N = 28), "other sport" (N = 24), and baseball (N = 19) had the highest number of participants of school sports.

Participants were then asked to indicate how many hours they spend a week exercising or playing sports. The results were as follows: None = 4.7%; Less than 1 hour = 12.8%; 1-3 hours = 16.9%; 4-6 hours = 22.7%; 7+ hours = 43%. Frequency of exercise/sports participation per week was as follows: none = 7.6%; 1-2 times = 15.9%; 3-4 times = 14.7%; 5-6 times = 30.6%; 7+ times = 31.2%. Testing revealed that 34.4% of participants had played at least one sport for 7 years or more, followed by 1-3 years (22.5%), 4-5 years (17.9%), and less than a year (11.9%). 8.6% of participants indicated they had never played a sport.

Zero-order Correlations

Zero-order correlations were performed to examine the relationships between main study variables (Table 2). Hypothesis 2 predicted that depression and social anxiety would be positively linked to emotional dysregulation and the results supported this prediction. A positive relationship was found between emotional dysregulation and depression ($r = .72, p < .01$). Additionally, results showed a positive relationship between emotional dysregulation and the social anxiety subscales (total fear: $r = .54, p < 01$; total avoidance: $r = .51, p < .01$). However, hypothesis 3 predicted that active coping (active-emotion coping and active-problem coping) would have a negative relationship with emotional dysregulation while avoidant coping would be positively linked to emotional dysregulation. Results showed that emotional dysregulation was positively correlated with avoidant coping ($r = .28, p < .01$) but negatively correlated with active problem coping ($r = -.23, p = .003$). No significant relationship was found between emotional dysregulation and active emotion coping. Therefore, hypothesis 3 was partially supported. Hypothesis 4 predicted that sports participation would have a negative

relationship with emotional dysregulation. A zero-order correlation was performed to examine the relationship between emotional dysregulation and type of sports participation (i.e. fun, club team, or school team). However, there were no significant relationships. Further testing revealed a negative relationship between emotional dysregulation and frequency of sports participation (r = -.16, p = .04) thereby supporting hypothesis 4. Results indicated that higher athletic identity was linked to lower emotional dysregulation (r = -.23, p = .003). Furthermore, emotional dysregulation had a negative relationship with the three athletic identity subscales: social identity (r = -.28, p < .001), exclusivity (r = -.19, p = .01), and negative affectivity (r = -.15, p = .04).

Multiple regression models. A hierarchical multiple regression model was utilized to evaluate predictors of emotional dysregulation. Preliminary analyses were conducted to ensure that no violation of the assumptions of normality, linearity, and homoscedasticity. Additionally, the correlations amongst the predictor variables included in the study were examined and presented in Table 2. Correlations were weak to strong, ranging from r=.03, p = .35 to r = .88, p < .001, indicating that multicollinearity was not an issue. Model 1 results were as follows. Step 1 included sex. At an alpha level of .10, the relationship between sex and emotional dysregulation was found to be statistically significant, R^2 = .05, $F(1,145)$ = 6.79, β = .21, p = .01. Sex explained 5% of the variance in emotional dysregulation, p = .01. Depression and social anxiety were added in step 2. The total variance explained by this model was 60% (F (4,142) = 52.56, p <.001). The introduction of internal symptomology explained an addition 55% of the variance in emotional dysregulation, after controlling for sex, R^2 = .55, F (3, 142) = 64.83, p < .01. Sex, social anxiety (Total Fear/Total Avoidance), and depression recording the following

betas: -.13 (p = .03), .30 (p = 01), .02 (p = .84), and .62 (p < .00) respectively. Coping style (Active Emotion Coping, Active Problem Coping, and Avoidant Coping) was added in step 3 and explained 62% of the total variance, F (7, 139) = 32.60, p < .01. After controlling for sex and internal symptomology, coping style explained an additional 3% of variance in emotional dysregulation, R^2= .03, F (3,139) = 3.01, p = .03. The betas were as follows: sex (β= -.08, p = .15), social anxiety (Total Fear: β= .28, p = .02 and Total Avoidance: β = .004, p = .98), depression (β = .58, p<.00), Active Emotion Coping (β= .11, p = .12), Active Problem Coping (β = -.21, p = .003), and Avoidant Coping (β = .05, p = .42). Step 4 included hours, times and years of sports participation. Step 4 explained 63% of the total variance, F (10, 136) = 23.01, p <.01. The betas were as follows: sex (β= -.08, p = .23), social anxiety (Total Fear: β= .30, p = .01 and Total Avoidance: β = -.01, p = .94), depression (β = .59, p<.00), Active Emotion Coping (β= .11, p = .13), Active Problem Coping (β = -.23, p = .002), Avoidant Coping (β = .05, p = .42), hours (β = .09, p = .33), time (β = -.04, p = .69), and years (β = .06, p = .29). After controlling for sex, internal symptomology, and coping style, sports participation explained an additional .01% of variance in emotional dysregulation, R^2 =.01, F (3, 136) = .97, p = .41. This was not statistically significant. Step 5 included athletic identity and explained 63% of the total variance, F (11, 136) = 20.94, p < .01. The betas were as follows: sex (β = -.08, p = .23), social anxiety (Total Fear: β= .30, p = .01 and Total Avoidance: β = -.01, p = .93), depression (β = .60, p <.01), Active Emotion Coping (β = .10, p =.15), Active Problem Coping (β = -.23, p = .002), Avoidant Coping (β = .05, p = .39), hours (β = .06, p = .52), time (β = -.05, p = .61), years (β = .06, p = .29), and athletic identity (β = .05, p = .55). After controlling for all other variables, athletic identity explained an additional .01% of

variable in emotional dysregulation, R^2 = .001, F (1, 135) = .36, p = .55. In the final step, three out of eleven predictor variables were statistically significant, with depression recording a higher Beta value (β = .60, p <.001) than total fear of social anxiety (β = .28, p = .01) and Active Problem Coping style (β = -.19, p = .005).

In order to find the model of best fit, the regression was run again without depression, years of sports participation, and time of sports participation. Additionally, Total Fear and Total Avoidance were combined into one variable, Total Social Anxiety. Step 1 included sex. At an alpha level of .10, the relationship between sex and emotional dysregulation was found to be statistically significant, R^2 = .05, F(1,163) = 8.41, β = .22, p = .004. Sex explained 5% of the variance in emotional dysregulation, p = .004. Social anxiety was added in step 2. The total variance explained by this model was 29% (F (2,162) = 33.38, p <.001). The introduction of internal symptomology explained an additional 24% of the variance in emotional dysregulation, after controlling for sex, R^2 = .29, F (1, 162) = 55.54, p < .01. Sex and social anxiety (Total Fear/Total Avoidance) recorded the following betas: .04 (p = .53) and .52 (p < 01), .02 (p = .84) respectively. Coping style (Active Emotion Coping, Active Problem Coping, and Avoidant Coping) was added in step 3 and explained 36% of the total variance, F (5, 159) = 18.06, p < .01. After controlling for sex and internal symptomology, coping style explained an additional 7% of variance in emotional dysregulation, R^2= .07, F (3,159) = 5.85, p = .001. The betas were as follows: sex (β= .05, p = .48), social anxiety (β= .06, p <.00), Active Emotion Coping (β= .13, p = .11), Active Problem Coping (β = -.28, p = .001), and Avoidant Coping (β = .19, p = .01). Hours of sports participation was added in step 4. Step 4 explained 36% of the total variance, F (6, 158) = 14.96, p <.01. The betas were as

follows: sex (β= -.05, p = .48), social anxiety (β= .43, p < .01), Active Emotion Coping (β= .13, p = .11), Active Problem Coping (β = -.29, p = .001), Avoidant Coping (β = .19, p = .01), and hours (β = .004, p = .95). After controlling for sex, internal symptomology, and coping style, sports participation explained an additional .01% of variance in emotional dysregulation, R^2 =.01, F (3, 136) = .97, p = .41. Athletic identity was added in step 5 and explained 37% of the total variance, F (7, 157) = 12.95, p < .01. The betas were as follows: sex (β = .04, p = .54), social anxiety (β= .42, p < .01), Active Emotion Coping (β = .14, p =.10), Active Problem Coping (β = -.28, p = .001), Avoidant Coping (β = .18, p = .01), hours (β = .07, p = .48), and athletic identity (β = -.09, p = .34).

The main hypothesis for this study predicted that after controlling all other variables, athletic identity would negatively predict emotional dysregulation. Results indicated that after controlling for all other variables, athletic identity explained an additional .04% of variable in emotional dysregulation, R^2 = .004, F (1, 157) = .93, p = .34. Therefore, athletic identity did not provide additional predictive value and one main hypothesis was not supported. In the final step, three out of eight predictor variables were statistically significant, with social anxiety recording a higher Beta value (β = .42, p <.001) than Avoidant Coping (β = .18, p = .01) and Active Problem Coping style (β = -.28, p = .001).

Discussion

This paper investigated the relationship between athletic identity and emotional dysregulation which had not been previously tested. Additionally, sports participation, depression, social anxiety, and coping were examined in relation to emotional dysregulation. A hierarchical regression model sought to determine the importance of

athletic identity, in relation to other variables, for the prediction of emotional dysregulation.

Sports Participation

This study aimed to expand on the literature on sports participation. Results revealed that majority of students participating in sports in some way (i.e., fun, club, school). In addition, a high number of students participated in multiple sports at competitive level (i.e., club and/or school sports). However, the high percentage of participation could be due in part to the school from which participants were recruited. Taking a physical education course is required by this school for freshman and sophomores. Juniors and seniors are also required to be enrolled in a physical education course unless they meet the exemption requirements set by the school. Additionally, the high percentage of multi-sport athletes could be linked to the enrollment size (994 students) and the rural location of the school where it is more common for adolescents to play multiple sports.

Sports participation was examined as a continuous variable rather than as a dichotomous variable (no participation vs. participation). Although the three types of sports participation had significant relationship with athletic identity, school sport participation had the highest correlation to Total AIMS score followed by club sport participation and participation for fun/exercise. Results were the same across all three AIMS subscales. School sport participation had a stronger relationship with Social AIMS, Exclusivity and Negative Affectivity than club sport participation and recreational participation. Due to the dedication need to participate at a higher level, it would require an individual being more invested in their identity as an athlete. Additionally, the number

of hours spent per week, times per week, years playing a sport were investigated in terms of their possible relationship to athletic identity. All three were linked positively to athletic identity. More specifically, number of hours spent per week was related strongly to overall athletic identity. Number of times per week participants played sports/exercised also was also positively linked to athletic identity as did number of years playing sports. This trend was also true across the three AIMS subscales (See table 2). This suggests that an individual who is willing to spend an increasing amount of time in playing sports would need invested in their identity as an athlete.

Previous literature has shown a significant relationship between sports participation and internal symptomology (i.e., anxiety and depression). In this study, we aimed to add to the literature on this relationship. Number of hours exercising/playing sports was linked negatively with total fear and total avoidance of social anxiety. Results were similar for number of times per week participants' exercised/played sports; total fear and total avoidance. It could be argued that an individual who spends more time playing sports or exercising would have more exposure to social interactions there by decreasing their fear of social interactions. The same could be said for increased weekly frequency of exercise/sports play. Additionally, number of hours exercising/playing sports was negatively linked to depression as well as number of times per week spent exercising/playing sports. These results were consistent with previous literature (Fredericks & Eccles, 2006; Harrison & Narayan, 2003).

Previous research has shown a relationship between sports participation and coping style (Dugdale, Eklund, & Gordon, 2002; Giacobbi & Weinberg, 2000). The current study showed similar results. Sports participation was shown to have a positively

significant relationship with both forms of "active" coping. More specifically, number of years participating in sports was positively linked with active emotion coping style and active emotion coping style. Number of hours per week spent exercising/playing sports and number of times per week spent exercising/playing sports were both positively linked to active problem coping. "Active" coping strategies are considered to be more functional than avoidant coping strategies which are considered dysfunctional. This result is consistent with existing literature which suggests that sports participation provides an individual with more opportunities to develop and practice functional coping strategies (Dugdale, Eklund, & Gordon, 2002; Giacobbi & Weinberg, 2000).

Athletic Identity

This study was designed to add to the limited existing literature on athletic identity as well as investigate new relationships. Although our main study hypothesis was not supported, other testing revealed interesting information about athletic identity. Results showed that athletic identity and social anxiety were negatively related. This was also true for all three athletic identity subscales; Social AIMS, Exclusivity AIMS, and Negative Affectivity AIMS. Although, this study investigated a more specific form of anxiety (social anxiety), these results contradict previous research of anxiety which showed a positive relationship between Negative Affectivity and anxiety (Masten, Tusak, & Faganel, 2006). An individual with higher athletic identity is more likely to spend more time playing sports or exercising which would increase their exposure to positive social interactions thereby decreasing their social anxiety. Level of depression was also shown to have a negative relationship with athletic identity as well as all subscales of athletic identity. Results were as follows: Total AIMS, Social AIMS, Exclusivity AIMS,

and Negative Affectivity AIMS. Again, an individual with higher athletic identity is more likely to spend more time playing sports or exercising which previous research has shown has a positive effect on psychological well-being and ability to cope.

Testing revealed mixed results for athletic identity and coping style. Athletic identity was shown to be positively linked to active problem coping indicating that individuals with stronger athletic identity were more likely to use active problem coping strategies. Although athletic identity and coping style has not been researched previously, existing literature showed that athletes were more likely to use active coping strategies (Dugdale, Eklund, & Gordon, 2002; Giacobbi & Weinberg, 2000). Social AIMS was shown to have a negative relationship with avoidant coping. Individuals with a higher social athletic identity (i.e., the perception of how others view the individual as an athlete) were less likely to use avoidant coping strategies. In contrast, social athletic identity was positively linked to active problem coping. An individual who values their social athletic identity would likely want to using active coping strategies (e.g., increasing effort) to ensure that other's view of them does not change. Additionally, individuals with higher negative affectivity athletic identity (i.e., how strongly an individual reacts to not being able to participate in his or her chosen sport) were more likely to choose active emotion coping strategies. Perhaps, an individual who would have a stronger reaction to not playing would likely want to using active coping strategies (e.g., increasing effort) to make sure they do not lose playing time.

Emotional Dysregulation

This study was designed to add the existing literature on emotional dysregulation as well as fill gaps in the research. Previous research has shown that difficulties

regulating regulations has been linked to increased internal symptomology (Kim-Spoon, Cicchetti, & Rogoschm 2013; Perez, Venta, Garnaat, & Sharp, 2012; Weinberg & Klonsky, 2009). The results of our research supported the existing literature. Results showed that individuals who had more difficulty regulating emotions (i.e., higher emotional dysregulation scores) had higher depression scores. The same was true for social anxiety. Individuals who reported more difficulty regulating their emotions were more likely to have higher levels of social anxiety.

As stated previously, coping is considered a relevant variable when investigating emotional dysregulation. Some researchers consider coping and emotional regulation to be part of the same stress management process (Watson & Sinha, 2008). Results showed that individuals who reported more difficulty regulating emotions were also more likely to utilize avoidant coping strategies. On the other hand, individuals who were more effective at regulating their emotions (i.e., lower emotional dysregulation scores) were more likely to utilize active problem coping strategies. These results support previous research that suggests there is relationship between emotional dysregulation and coping.

Limitations and Future Directions for Research

This study had several limitations. Cronbach's alphas were calculated for all of the scales and the Brief COPE had low internal consistencies; Avoidant Coping, α =.54; Active Emotion-Focused Coping, α =.61. Also, the participants were all recruited from the same rural Midwestern high school. This size of the school, geographic location and demographic makeup may not be an accurate representation of all adolescents. Future research should recruit participants from larger high schools in different parts of the country. Depending on the region of the country, attitudes towards the importance of

sports participation may differ which could influence the number of adolescents who participate as well as athletic identity scores. Additionally, future studies should aim to have a more ethnically diverse participant pool to provide a more accurate representation of the population.

Although researchers were present to read the directions of the questionnaires and read the questions, it could have been beneficial to have separated participants into smaller groups or had more researchers present to ensure every participant understood each questionnaire and each question. Furthermore, researchers were unable to keep participants from discussing study with future participants once they left the study. It is possible that having prior knowledge of the questionnaires influenced participants' answers. Future studies should create a more controlled testing environment to ensure that participants have no prior knowledge of the questionnaires.

Information about participants sports participation and exercise habits was obtained through a questionnaire developed by researchers and was included as part of the demographic information. This questionnaire could have tested on adolescents prior to testing day to ensure it was easy to understand and had adequate construct validity.

As previously stated, sports participation is not frequently researched as a continuous variable as was done in this study. Typically, studies compare participation vs. non-participation. Additional research is necessary to strengthen the literature on spectrum sports participation as well as determine the relevant factors of sports participation. Initially, this study aimed to investigate sports participation using level of participation (i.e. for fun/exercise, club, school) as well as the number of hours spent per week, times per week, years playing a sport. Although these specific factors had

significant correlational results, not all were significant in the multiple regression models. Future research should further investigate sports participation as a spectrum variable to determine what factors of participation are relevant.

Additionally, by high school, an individual's athletic identity could be firmly established. Future research should investigate athletic identity at the elementary school and middle school level when individuals tend to have a less established identity. Longitudinal studies should be completed to examine whether athletic identity changes over time as well its relationship with variables like coping and emotional dysregulation.

Clinical Implications

The results of this study have several clinical implications. It has been said before that sports participation provides individuals more opportunities to develop and practice effective emotional regulation strategies. Given that that the results showed that sports participation and athletic identity have a positive relationship on emotional regulation, clinicians should take these variables into account when working with adolescents. If a clinician is working with an adolescent who is having difficulty regulating their emotions, it could be beneficial to take into account whether they play sports as well as their exercise habits. If an adolescent client does not engage in exercise or participate in sports, it could be worth for the clinician to encourage them to do so. It would not only have obvious physically health benefits, but could psychological health benefits as well. This could be especially relevant for clinicians working within a school system who have a direct knowledge of school sports opportunities and exercise classes offered through the school.

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Table 1

Means and Standard Deviations of Main Study Variables

	Mean	*Standard Deviation*	*Range*	*Possible Range*	*Cronbach's Alpha*
Brief COPE	62.61	9.85	1.65	1-4	.79
Avoid.Cope	12.31	2.76	1.41	1-4	.54
Prob. Focus	14.99	3.63	.33	1-4	.78
Emo. Focus	35.32	5.80	1.52	1-4	.61
Soc Anxiety	39.60	28.84	1.33	0-3	.97
Total Fear	20.58	15.12	1.33	0-3	.94
Total Avoid	19.02	14.63	1.03	0-3	.93
Fear Perf	10.45	8.06	1.33	0-3	.90
Fear Social	10.13	7.61	1.20	0-3	.90
Avoid. Perf	9.29	7.66	1.03	0-3	.86
Avoid. Social	9.74	7.62	.41	0-3	.87
Depression	1.04	9.76	1.58	0-3	.84
Athletic Id	28.24	14.79	1.77	1-7	.96
Social Id	13.73	6.64	.70	1-7	.93
Neg. Aff.	7.76	4.52	.30	1-7	.86
Exclusivity	6.75	4.55	.41	1-7	.95
DERS	90.16	19.18	1.54	1-5	.88
DERS Non	12.72	5.70	.38	1-5	.89
DERS Goals	14.31	5.23	.68	1-5	.88
DERS Imp	13.58	6.18	.99	1-5	.89

DERS Aware	17.62	5.47	1.00	1-5	.83
DERS Strat	17.72	7.17	.77	1-5	.89
DERS Clarify	11.42	4.13	.67	1-5	.75

Note. Soc. Anxiety = Liebowitz Social Anxiety Scale-Child Adolescent version; Total Fear = Liebowitz Social Anxiety Scale-Child Adolescent version Total Fear subscale; Total Avoid = Liebowitz Social Anxiety Scale-Child Adolescent version Total Avoidance subscale; Fear of Perf = Liebowitz Social Anxiety Scale-Child Adolescent version Fear of Performance situations subscale; Fear of Social = Liebowitz Social Anxiety Scale-Child Adolescent version Fear of Social situations subscale; Avoid of Perf = Liebowitz Social Anxiety Scale-Child Adolescent version Avoidance of Performance situations subscale; Avoid of Social = Liebowitz Social Anxiety Scale-Child Adolescent version Avoidance of Performance Situations; Depression = Center for Epidemiologic Studies Depression Scale for Children; Athletic Id = Athletic Identity Measurement Scale (AIMS); Social id = AIMS social identity subscale; Neg. Aff. = AIMS Negative Affectivity subscale; Exclusivity = AIMS exclusivity subscale; DERS = Difficulties in Emotion Regulation Scale, DERS Non = Difficulties in Emotion Regulation Scale Nonaccept Subscale; DERS Goals = Difficulties in Emotion Regulation Scale Goals Subscale; DERS Imp = Difficulties in Emotion Regulation Scale Impulse subscale; DERS Aware = Difficulties in Emotion Regulation Scale Awareness subscale; DERS Strat = Difficulties in Emotion Regulation Scale Strategies subscale

Table 2

Zero-Order Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Athletic Id	-															
Social Id	.96**	-														
Exclusivity	.93**	.84**	-													
Neg. Aff.	.92**	.84**	.78**	-												
Soc. Anx	-.25**	-.29**	-.16*	-.26*	-											
Depression	-.34**	-.40**	-.29**	-.25**		-										
Avoidant	-.13	-.18*	-.11	-.05		.35	-									
Problem	.20**	.18*	.14	.25**		-.11		-								
Emotion	.10	.08	.07	.16*		.06			-							
Fun	.33**	.37**	.24**	.29**						-						
Club	.57**	.58**	.50**	.52**						.23**	-					
School	.67**	.69**	.53**	.64**						.23**	.56**	-				
Hours	.73**	.75**	.63**	.63**		-.22				.40**	.43**	.54**	-			
Times	.67**	.70**	.61**	.51**		-.23				.43**	.44**	.50**	.80**	-		
Years	.24**	.24**	.19*	.24**		-.12				.09	.10	.22**	.28**	.28**	-	
DERS	-.23**	-.28**	-.19*	--.15*		.72**	.28**	-.23**	.06	-.06	-.09	-.06	-.13	.16*	-.03	-

Note. Athletic Id = Athletic Identity Measurement Scale (AIMS); Social id = AIMS social identity subscale; Neg. Aff. = AIMS Negative Affectivity subscale; Exclusivity = AIMS exclusivity subscale; Soc. Anx = Liebowitz Social Anxiety Scale-Child Adolescent version; Depression = Center for Epidemiologic Studies Depression Scale for Children; Avoidant = Brief COPE Avoidant Subscale; Problem = Brief COPE Problem Focused Subscale; Emotion = Brief COPE Emotion Focused Subscale; Fun = Sports Participation for fun; Club = Sports Participation for a Club; School = Sports Participation for School; Hours = Hours of Sports Participation; Times = Number of times/week of Sports Participation; Years = years of Sports Participation; DERS = Difficulties in Emotion Regulation Scale, DERS Non = Difficulties in Emotion Regulation Scale Nonaccept Subscale; DERS Goals = Difficulties in Emotion Regulation Scale Goals Subscale; DERS Imp = Difficulties in Emotion Regulation Scale Impulse subscale; DERS Aware = Difficulties in Emotion Regulation Scale Awareness subscale; DERS Strat = Difficulties in Emotion Regulation Scale Strategies subscale

Table 3
Club Sport Participation N = 172

	Never Played	*Less than 1 year*	*1-2 years*	*3-5 years*	*6-8 years*	*9+ years*
Baseball	139	1	5	6	6	15
Basketball	126	7	7	11	9	12
Cheer	166	3	1	1	1	0
Cross Country	163	1	1	4	0	1
Dance	158	5	2	1	2	4
Field Hockey	168	1	1	0	1	1
Football	140	4	11	8	6	3
Golf	159	6	4	1	1	1
Gymnastics	166	1	0	1	2	2
Ice Hockey	167	0	3	2	0	0
Lacrosse	167	11	2	0	0	2
Softball	160	1	1	2	1	7
Tennis	157	7	2	2	2	2
Track and Field	142	2	12	15	1	0
Volleyball	150	7	7	4	4	0
Water Polo	170	0	0	1	0	1
Wrestling	154	2	3	6	5	2
Other	148	1	6	11	2	4

Table 4

School Sport Participation N = 172

	Never Played	*Less than 1 year*	*1-2 years*	*3-5 years*	*6-8 years*	*9+ years*
Baseball	153	3	7	3	1	5
Basketball	132	5	11	10	5	9
Cheer	165	2	2	1	1	1
Cross Country	163	0	4	5	0	0
Dance	168	1	2	1	0	0
Field Hockey	170	0	0	1	0	1
Football	146	3	9	10	2	2
Golf	166	1	1	1	1	2
Gymnastics	171	0	0	1	0	0
Ice Hockey	172	0	0	0	0	0
Lacrosse	170	0	0	0	0	2
Softball	162	0	3	4	0	3
Tennis	161	4	1	4	0	2
Track and Field	136	1	20	14	1	0
Volleyball	153	3	2	11	3	0
Water Polo	171	0	0	1	0	1
Wrestling	162	1	1	3	4	1
Other	148	3	12	4	2	3

Table 5
Age of participants

Age	*N*
14	19
15	48
16	65
17	23
18	14
19	2

**Note*. 1 participant did not report his/her age.

Table 6
Grade of participants

Grade	*N*
9	49
10	77
11	20
12	25

**Note.* 1 participant did not report his/her grade

Table 7

Hierarchical Regression Analysis for Variables Predicting Emotional Dysregulation (N = 172)

	Variable	*B*	*SE B*	*β*
Step 1				
	Sex	10.97	3.77	.22 *
Step 2				
	Sex	2.17	3.47	.04
	Social Anxiety	.45	.06	.52**
Step 3				
	Sex	2.39	3.39	.05
	Social anxiety	.37	.06	.43**
	Avoidant Coping	9.93	3.77	.19**
	Active Emotion Coping	9.21	5.79	.13
	Active Problem Coping	-11.92	3.45	-.28**
Step 4				
	Sex	2.42	3.45	.05
	Social anxiety	.37	.06	.43**
	Avoidant Coping	9.94	3.79	.19*
	Active Emotion Coping	9.22	5.81	.13
	Active Problem Coping	-11.96	3.50	-.29**
	Hours	.09	1.35	.004
Step 5				
	Sex	2.14	3.47	.04
	Social anxiety	.36	.06	.42**
	Avoidant Coping	9.46	3.82	.18*
	Active Emotion Coping	9.64	5.82	.14
	Active Problem Coping	-11.75	3.51	-.28**
Hours		1.31	1.86	.07
	Athletic Identity	-.15	.16	-.09

*$p < .05$

**$p < .01$

Appendix A

1. Please circle your gender

   Male

   Female

2. Age ____

3. Grade ____

4. Please circle your race

   White

   Black or African American

   American Indian and Alaska Native

   Asian

   Native Hawaiian and other Pacific Islander

   Hispanic or Latino

   Two or more races

5. Please circle any activity or sport you have played in the last 12 months just <u>for fun or exercise</u>

   Baseball Basketball Biking/cycling Cheerleading

   Cross country Dance Field hockey

   Football Golf Gymnastics Ice hockey

   Jogging Kickboxing Lacrosse Mixed Martial Arts

   Softball Soccer Swimming/diving Tennis

   Treadmill

Volleyball	Walking	Water polo
Weights		
Wrestling	Yoga	Other _____

6. Please circle any sport you have played in the last 12 months for a club team. For every sport you circle, please indicate how many years you have played that sport.

Baseball	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Basketball	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Cheerleading	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Cross country	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Dance	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Field hockey	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Football	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Golf	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Gymnastics	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Ice hockey	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Lacrosse	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Softball	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Tennis	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Track and field	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Volleyball	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı

Water Polo	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Wrestling	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Other____	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı

7. Please circle any sport you have played in the last 12 months <u>for a school team</u>

Baseball	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Basketball	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Cheerleading	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Cross country	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Dance	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Field hockey	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Football	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Golf	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Gymnastics	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Ice hockey	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Lacrosse	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Softball	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Tennis	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Track and field	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Volleyball	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı

Water Polo	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Wrestling	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı
Other____	Less than 1 yr.	1-2 yrs.	3-5 yrs.	6-8 yrs.	9+ yı

8. How many hours a week do you spend exercising or playing sports?

   Less than 1

   1-3 hours

   4-6 hours

   7+ hours

   None

9. How many times a week do you exercise or play sports?

   None

   1-2 times

   3-4 times

   5-6 times

   7+ times

10. If you previously played sports but no longer do, how many years did you play? If you played more than one sport, use the sport you played the longest.

    Less than 1

    1-3 years

    4-6 years

    7+ years

    Never played a sport

11. Is there anything else you feel we should know about your exercising habits or the sports you play?

Appendix B

7-Item Version of the Athletic Identity Measurement Scale (AIMS)

Please circle the number that best reflects the extent to which you agree or disagree with each statement regarding your sport participation.

---

1. I consider myself an athlete.

   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

2. I have many goals related to sport.

   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

3. Most of my friends are athletes.

   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

4. Sport is the most important part of my life.

   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

5. I spend more time thinking about sport than anything else.

   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

6. I feel bad about myself when I do poorly in sport.

   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

7. I would be very depressed if I were injured and could not compete in sport.

Strongly disagree	1	2	3	4	5	6	7

Strongly agree

Appendix C

Difficulties in Emotion Regulation Scale (DERS)

1	2	3	4	5
Almost never	Sometime	About half the time	Most of the time	Almost always
(0-10%)	(11-35%)	(36-65%)	(66-90%)	(91-100%)

Please indicate how often the following 36 statements apply to you by writing the appropriate number from the scale above (1 – 5) in the box alongside each item.

1 I am clear about my feelings (R) □

2 I pay attention to how I feel (R) □

3 I experience my emotions as overwhelming and out of control □

4 I have no idea how I am feeling □

5 I have difficulty making sense out of my feelings □

6 I am attentive to my feelings (R) □

7 I know exactly how I am feeling (R) □

8 I care about what I am feeling (R) □

9 I am confused about how I feel □

10 When I'm upset, I acknowledge my emotions (R) □

11 When I'm upset, I become angry with myself for feeling that way □

12 When I'm upset, I become embarrassed for feeling that way □

13 When I'm upset, I have difficulty getting work done □

14 When I'm upset, I become out of control □

15 When I'm upset, I believe that I will remain that way for a long time □

16 When I'm upset, I believe that I'll end up feeling very depressed □

17 When I'm upset, I believe that my feelings are valid and important (R) □

18 When I'm upset, I have difficulty focusing on other things □

19 When I'm upset, I feel out of control □

20 When I'm upset, I can still get things done (R) □

21 When I'm upset, I feel ashamed with myself for feeling that way □

22 When I'm upset, I know that I can find a way to eventually feel better (R) □

23 When I'm upset, I feel like I am weak □

24 When I'm upset, I feel like I can remain in control of my behaviours (R) □

25 When I'm upset, I feel guilty for feeling that way □

26 When I'm upset, I have difficulty concentrating □

27 When I'm upset, I have difficulty controlling my behaviours □

28 When I'm upset, I believe that there is nothing I can do to make myself feel better □

29 When I'm upset, I become irritated with myself for feeling that way □

30 When I'm upset, I start to feel very bad about myself □

31 When I'm upset, I believe that wallowing in it is all I can do □

32 When I'm upset, I lose control over my behaviours □

33 When I'm upset, I have difficulty thinking about anything else □

34 When I'm upset, I take time to figure out what I'm really feeling (R) □

35 When I'm upset, it takes me a long time to feel better □

36 When I'm upset, my emotions feel overwhelming □