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## An Examination of the Mental Health Symptoms of Former Adolescent Athletes Who Experienced Either Forced or Expected Athletic Retirement

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**An Examination of the Mental Health Symptoms of Former Adolescent Athletes Who  
Experienced Either Forced or Expected Athletic Retirement**

By

Lindsay Ahmann

Accepted in Partial Completion  
of the Requirements for the Degree

*Master of Science*

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## **Master's Thesis**

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Lindsay Ahmann

June 16<sup>th</sup>, 2023

**An Examination of the Mental Health Symptoms of Former Adolescent Athletes Who  
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A Thesis  
Presented to  
The Faculty of  
Western Washington University

In Partial Fulfillment  
Of the Requirements for the Degree  
*Master of Science*

by  
Lindsay Ahmann  
June 2023

## Abstract

Forced athletic retirement has been associated with negative mental health symptoms within intercollegiate and elite populations (Blakelock et al., 2016; Wippert & Wippert, 2010), yet less is known about adolescent athletes who retire. The purpose of the current study was to assess the mental health symptoms and flourishing of former non-elite adolescent athletes to determine if there were any group differences based on reasons for retirement, gender, or perceptions of control. Using random stratified sampling, 347 former adolescent athletes ( $M_{\text{age}} = 19.94$ ) were recruited from colleges across the United States. Of the sample, 43% of participants retired for forced (i.e., injury/illness, deselection, COVID-19) reasons and 57% percent expected sport retirement (i.e., graduation). Using anonymous online surveys, participants completed measures of psychological distress, anxiety, depression, and flourishing. MANOVAs revealed statistically significant higher negative mental health scores among participants who were forced to retire compared to those who expected retirement ( $p = <.001$ ,  $\eta_p^2 = .07$ ) and there were lower negative mental health symptoms reported by those who perceived control over retirement ( $p = .004$ ,  $\eta_p^2 = .03$ ). Lastly, an independent samples t-test revealed that individuals who expected retirement reported statistically significant higher levels of flourishing ( $p = .001$ ,  $d = 0.35$ ) compared to those who were forced to retire. Career planning and clinical supported services may be beneficial for this population.

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## **Literature Review**

Athletes' transition out of sport has been studied for multiple decades, with researchers initially focusing on the consequences and trauma that athletes have experienced after retirement from competitive sport (Cecić Erpič et al., 2004; Taylor & Ogilvie, 1994). Over time, researchers have shifted their viewpoint of athletic retirement as a singular event, to a process that influences the well-being and development of former athletes (Stambulova et al., 2007; Wylleman et al., 2004). Although research on the topic is relatively limited, retirement from athletics has been recognized as part of the natural developmental stages and researchers have slowly altered their understanding of how athlete's experience their athletic retirement (Coakley, 1983).

For perspective, more than 480,000 National Collegiate Athletic Association (NCAA) athletes compete in college sports each year, however, only about 1% are able to pursue their career to the professional level (NCAA, 2020). Though, approximately 20% of athletes report major challenges, feelings of personal loss, and stress during the transition out of athletics, the majority of athletes in studies on retirement reported a healthy and positive transition experience (Alfermann & Stambulova, 2007; Fortunato & Marchant, 1999). Despite this generalization, researchers have found that mental health challenges are commonly reported throughout athletic transitions, specifically among athletes who have been forced to retire from their sport (Brown et al., 2017; Gouttebarger et al., 2019; Lavalley et al., 1997; Stambulova et al., 2007; Stokowski et al., 2019; Oltmans et al., 2021; Webb et al., 1998). Given these findings, it is important to further examine if the reason for one's athletic retirement contributes to a more negative experience. Further, researchers have primarily focused on professional and collegiate athletes; however, adolescents frequently experience athletic retirement for various reasons during critical

developmental stages (Shlafer et al., 2014). Additionally, there are not often analyses of athletes' mental health by gender, yet it is known that adolescent girls frequently experience higher anxiety and depressive symptoms compared to adolescent boys (Afifi, 2007). Overall, at present, there is little data available on athletes' mental health during the retirement process, and more specifically little is known about adolescent athletes who retire from their sport.

The focus of this review is on the mental health symptoms that elite and non-elite athletes of various competitive levels encounter during athletic retirement. To begin, sport and non-sport theories regarding the conceptualization of athlete transitions in professional and collegiate populations will be presented. Following the theoretical framework, athletic transitions, voluntary and forced athletic retirement, and crisis transitions will be defined. Next, studies that examined athletes' reasons for termination and associated mental health symptoms across various populations will be included. Finally, this review concludes with a call to expand research on the specific psychological symptoms associated with forced athletic retirement from high school sports.

### **Terminology Relevant to Athletic Retirement**

For athletes, career retirement and termination of one's competitive career are essentially inevitable. In general, a *transition* can be defined as "an event or non-event [which] results in a change in assumption about oneself and the world and thus requires a corresponding change in one's behavior and relationships" (Schlossberg, 1981, p. 5). Within Schlossberg's (1981) human adaptation to transition model, events are defined as obvious life changes (i.e., graduation, getting married, having children, etc.), whereas non-events are more subtle (i.e., an expected career advancement that never occurs). Within sport literature, a specific transition that has received research attention is sport retirement. Throughout this review, the terms "transition",

“retirement”, “athletic retirement” and “athletic transition” will be used interchangeably; researchers use these various terms when discussing the period after the end of one’s competitive athletic career.

Early interest in examining athletes’ career transitions emerged from the findings that some athletes undergo difficult crises that merit psychological assistance (Stambulova, 2003); however, researchers have more recently challenged this assumption, finding that athletic retirement has been reported as both a positive and negative experience (Brown et al., 2017; Oltmans et al., 2021; Stokowski et al., 2019; Wippert & Wippert, 2010).

While examining athletic transitions, it is important to recognize factors that differentiate reasons for retirement. Researchers have categorized athletic transitions into those that are *forced* (i.e., nonnormative) and those that are *voluntary* (i.e., normative or expected; Alfermann & Stambulova, 2007). Throughout past literature, researchers have noted that the voluntariness of the decision to retire and the level of control that athletes feel over their athletic career termination are the predominant psychological variables that influence the quality of athletes’ transitions out of sport (Alfermann et al., 2004; Cecić Erpič et al., 2004). Voluntary and normative athletic career transitions are those considered predictable and in the athlete’s control. Examples of voluntary athletic retirement include graduation, moving to a higher level, autonomous decision to retire, work/study commitments, and decreased personal enjoyment of the sport (Alfermann & Stambulova, 2007; Lavalley et al., 1997). In contrast, forced and nonnormative transitions are less predictable and occur in the form of injury, deselection, aging out of competitive divisions, and cancellation of a season (Alfermann & Stambulova, 2007; Barcza- Renner et al., 2022; Blakelock et al., 2016; Kaul, 2017; Stokowski et al., 2019). However, the distinction between forced and voluntary retirement is not always clear, indicating

that multiple factors may lead to a single cause for leaving sport (Kerr & Dacyshyn, 2000; Taylor & Ogilvie, 1994). For example, an athlete may suffer an injury and then be cut from a team, resulting in forced retirement. Further, Kerr and Dacyshyn (2000) found that choosing to retire does not preclude athletes from experiencing difficult transitions. The researchers interviewed seven former professional female gymnasts between the ages of 16 and 22, who had been retired for between six months to five years. Five of the seven gymnasts reported difficult transition experiences, while all participants mentioned missing part of their involvement in sport, as well as disorientation, loss of control, and frustration to different extents; however, three of the seven gymnasts voluntarily retired based on difficulties or dissatisfaction with the coaches, along with the high stress of elite gymnastics. Overall, it is important that researchers acknowledge the individual factors that contribute to one's transition experience.

Nonetheless, transitions may advance into what is described as a *crisis transition*, where athletes are unable to cope and experience prolonged emotional distress and mental health difficulties (Stambulova, 2017). Some differences between athletes who experience a successful transition versus a crisis transition appear to be factors like the causes of their retirement, the individual and personal circumstances, as well as social resources that are available to individual athletes (Alfermann & Stambulova, 2007).

### **Theoretical Understandings and Career Transition Models**

Although there are a variety of general theories that can be applied in a sport-specific context to understand career transition, this review will focus on attribution theory (Weiner, 1988), followed by non-sport and sport transition models, as well as a review of the additionally relevant concept of athletic identity (Brewer et al., 1993).

## *Attribution Theory*

When trying to understand the ways that an individual may interpret their athletic retirement, attribution theory (Weiner, 1972) may conceptually explain the process. An attribution can be generally considered as an explanation about the cause of an event or reason for behavior (Rees et al., 2005). For example, when an athlete experiences something like a failure in sport, they will mentally use an attribution to explain or understand the factors that led to the outcome. Broadly, attribution theory refers to the way that an individual explains their behavior or event that occurs (Weiner, 1972). In other words, this framework can help researchers to understand the reactions that individuals encounter and how their self-concept and perceptions in the future may be affected (Kelley, 1973). When applied in a sport context, attribution theory can assist researchers in understanding factors that contribute to athletic retirement and resultant behavior (Heider & Weiner, 2002; Rees et al., 2005).

Heider (1958) and Weiner (1972) posit three main dimensions within attribution theory. The first dimension references the *locus of causality*, which is defined as whether one believes that their behavior or level of success is within their control. According to how researchers describe the theory's framework, there are two possible attribution options related to the locus of causality: internal or external. For example, when an athlete interprets a win internally, they have attributed it to factors within themselves, like their talent or knowledge. If an athlete were to lose a match, they may explain or understand it externally, by thinking that the loss was due to luck or perhaps due to the difficulty of the competitive environment (e.g., the opponent was ranked higher going into the competition). The second dimension, *stability*, is explained in the theory as the expectancy and consistency of an outcome or event. In other words, an individual will reflect on whether the outcome is either relatively permanent (i.e., stable) or if it is changeable (i.e.,



unstable). For example, if the athlete perceives their win to be based on ability, then the outcome is relatively stable. If it is interpreted based on chance or how much they have prepared, then the outcome is relatively unstable and can lead to different outcomes. Lastly, the dimension of *controllability* is defined as whether the individual believes that they can influence the outcome of the situation (i.e., controllable) or whether it is out of their control (i.e., uncontrollable). For example, if an athlete attributes their win to how hard they trained in the gym over the summer, then it is relatively controllable. If an athlete attributed the outcome to luck or the high skill of other participants in the race, then the athlete may interpret the outcome as uncontrollable (Weiner, 1988).

According to this theory, a person's affect (i.e., feelings of happiness or sadness) will be impacted by their attributions of the reason for a particular outcome. Particularly if an outcome was seen as important, unexpected, and negative, individuals may experience negative emotions; for example, if an individual attributes a failure as due to internal and stable causes they may perceive that they cannot change the outcome in the future, which can lead to feelings of shame and reduced motivation (i.e., "I don't think I will play well because I am not good at this event"). Taken together, the way that someone interprets an event will in turn, affect their behavior and how they view themselves. Ultimately, the attributions that an athlete makes about themselves during retirement can determine how they perceive the situation, which can alter their motivation to balance the demands with the resources that are available.

When attributions are applied in the context of athletic retirement, the individual's understanding of the reason for their retirement, particularly the degree of psychological control (i.e., perceived control) they feel over the situation, may increase their ability to deal with a negative event such as transitions (Webb et al., 1998) or intra-team selections (Kerr & Beh,

1995). For example, an athlete who feels in control over their retirement may experience more positive emotions throughout the transition, compared to an athlete who suffers a career-ending injury and feels a lack of control. Overall, the cause of retirement and whether it is forced or voluntary, appears to contribute to the quality of individuals' athletic retirement process (Webb et al., 1998). Further, athletes who perceive that they have control over life events are more likely to have increased self-efficacy and mastery experiences, which helps to foster the belief that they can improve or change their situation (Webb et al., 1998, p. 341). Self-efficacy can be defined as one's belief about their abilities to complete or perform specific tasks (Bandura et al., 1999), while mastery is when an athlete experiences personal success in a specific task (Bandura et al., 1977). Attribution theory is useful as a lens to understand athletes' perceptions about the reason for their retirement; yet the theory is broad and not specific to transition. To further understand athletic retirement experiences, theoretical models specifically about transition can provide a framework of how athletes may process their retirement from sport.

### ***Non-Sport Career Transition Models***

Created for application to a general population, Schlossberg's (1981) human adaptation to transition model can help researchers understand how athletic transition is a process, rather than a singular event. Schlossberg (1981) illustrated three primary factors that affect one's transition after the initial event has occurred: 1) transition specific factors (e.g., duration, whether the role change was a gain or loss, or suddenness), 2) environmental characteristics pre- and post-transition (e.g., internal support systems or opportunities) and 3) individual characteristics (e.g., age, race, previous experience, value orientation, etc.; Schlossberg, 1981). Similar to attribution theory, Schlossberg (1981) proposes that the factors of controllability are associated with quality of the transition process. Additionally, the human adaptation to transition model

references how the transition fits with the intrapersonal life stage and situation, rather than focusing on the transition itself (Stambulova & Samuel, 2019). For example, Schlossberg (1981) posits that a successful adaptation to transition can be explained as “a process during which an individual moves from being totally preoccupied with the transition to integrating the transition into their life” (Schlossberg, 1981, p. 7). In sum, this model encompasses aspects that are common throughout individual retirement experiences across various fields, and Schlossberg (1981) acknowledged the connection between the process and the effect on the individual.

More recently, Stambulova and Samuel (2019) have postulated that Schlossberg’s (1981) definitions are slightly vague and not specifically applicable to sport; they articulated the need for defining more concrete transitional demands (i.e., finding a new occupation) to adapt to life after sport. Broadly, Schlossberg (1981) indicated that everyone will react differently to life events and transitions, thus recognizing that each transition is unique to the individual (Kuettel et al., 2017; Schlossberg, 1981). Although it may be difficult to predict how an athlete adapts to life after sport, the model appears to be applicable in various situations (Flowers et al., 2014), helping to break down the transition process through identifying causal factors, demands situated in the transition, and the perception of control (Stambulova, 2007). Overall, Schlossberg’s (1981) model can help researchers understand the factors that influence positive and negative reactions to transitions through identifiable environmental factors and individual characteristics, however, the use of more sport-specific models is necessary to help researchers explain the complexities of athletic transition.

### ***Sport-Specific Career Transition Models***

Theoretical concepts developed by researchers before the 1990’s regarding the retirement process were rarely applied outside of a general non-sport population (Fernandez et al., 2006).

As a result, sport psychology researchers began to develop new theories unique to sport and the athletic career transition process. First, Taylor and Ogilvie (1994) developed a five-step conceptual model of athletic retirement, which addresses the entirety of athletes' transition process and draws from theoretical and conceptual explanations within and outside of a sport context. The facets of this model include 1) causes of retirement among athletes, 2) factors related to adaptation to retirement, 3) available resources for retirement adaptation, 4) quality of adaptation to athletic retirement, and 5) interventions for athletic retirement difficulties. In the first facet of the conceptual model of adaptation to retirement, Taylor and Ogilvie (1994) list chronological age, injury, deselection, and free choice as reasons for athletes to retire from their athletic career. In this list, three of the four reasons for retirement are involuntary. From this, Taylor and Ogilvie (1994) postulated that the absence of control regarding one's athletic retirement from a sport that the individual closely identifies with, may create a threatening and difficult situation; thus, they argue that free choice is the most desirable cause of retirement (Taylor & Ogilvie, 1994). Lavalley and colleagues (1997) conducted a study that supported the findings from Taylor and Ogilvie (1994), revealing that those who were forced to retire perceived drastically less control and experienced greater emotional and social challenges with adjustment than those who retired voluntarily.

Regarding the second facet of the model, Taylor and Ogilvie (1994) postulated that five main factors related to adaptation to sport retirement are: 1) developmental contributors, 2) self-identity, 3) social identity, 4) perceptions of control, and 5) tertiary contributing factors. They argue that the "single-minded pursuit of excellence" among elite athletes may restrict development and create psychological and social dangers that may influence one's adaptation to retirement (Taylor & Ogilvie, 1994, p. 7). In other words, Taylor and Ogilvie (1994) stated that

athletes who focus primarily on their sport from a young age may lack social and personal growth, may experience challenges with identity, social roles and behavior, and support systems outside of athletics. Relatedly, Taylor and Ogilvie (1994) also argued that self-identity is the fundamental psychological factor that influences one's adaptation and transition out of athletics (Taylor & Ogilvie, 1994). For example, when an athlete dedicates all their time to athletics and lacks developmental variety, their self-worth and support may become exclusively reliant on their involvement and success within athletics. Similarly, an athlete's social identity and status may diminish upon their retirement from sport, causing difficulties with self-worth and perceptions. Next, Taylor and Ogilvie (1994) note that an athlete's perception of control over their retirement decision has been associated with psychological symptoms of depression, anxiety, distress, and substance abuse. Lastly within this facet, tertiary factors are a combination of the interpersonal and intrapersonal stressors that may arise and influence the quality of one's athletic retirement. Some stressors that athletes may face include managing finances, employment, health, and social support systems. Overall, Taylor and Ogilvie (1994) note the various internal and external influences and challenges that may influence an athlete's experience of the transition out of athletics.

In the third aspect of the conceptual model of adaptation to retirement, Taylor and Ogilvie (1994) recognize the influence of resources for retirement adaptation, including: 1) cognitive, emotional/physiological, and behavioral coping skills (i.e., cognitive restructuring, relaxation skills, and time-management training), 2) social support (i.e., friends, family, and institutional support outside of athletics), and 3) pre-retirement planning (i.e., continuing education, financial planning, employment endeavors, etc.). The extent that an athlete can recognize and utilize their resources, will influence adaptation to athletic retirement. In the fourth

facet of the model, regarding the quality of an athlete's transition out of sport, Taylor and Ogilvie (1994) stated that an athlete's transition will not necessarily be negative; however, psychological, social, and environmental factors among the previous three aspects of the model will determine the quality of their retirement process. Additionally, the preceding steps to an athlete's retirement, either a positive or negative transition experience, will determine whether interventions are needed for the individual. In general, Taylor and Ogilvie (1994) note that in addition to the factors presented in the earlier steps, the amount that an athlete sacrifices or loses (i.e., scholarship) during this process, can influence the outcome. In the fifth facet, Taylor and Ogilvie (1994) reference how athletes can maintain or increase self-worth, change the ways they see themselves through use of coping methods, broaden their support systems, or seek treatments for psychological challenges during athletic transition. Despite resources and coping methods to assist in the transition process, some athletes may continue to be in denial about the inevitable end to their sporting career, whether it is involuntary or by free choice; therefore, more specific and structured resources may be necessary to help combat the challenges that athletes may face, to avoid the potentially negative and long-term effects (Taylor & Ogilvie, 1994). Although every athlete's transition out of sport is different, Taylor and Ogilvie (1994) conceptualized the general process that athletes encounter, while recognizing individuality throughout their model.

More recently, Stambulova (2003) developed the athletic career transition model after a grounded theory study, in an effort to describe the way that athletes process the demands and challenges of advancing to the next level in their sport or retiring from their career (Stambulova, 2003; Stambulova et al., 2007). This model has continuously evolved over the years and helps researchers to understand the athletic transition process through two pathways and outcomes, and a secondary pathway based on interventions and coping strategies later in the process

(Stambulova & Samuel, 2019). According to Stambulova (2003, p. 99), the demands and challenges that athletes face throughout their retirement process creates a conflict of “what the athlete is” and “what the athlete wants or ought to be.” In the first dimension of the model, Stambulova (2003) proposed that athletes must balance demands (i.e., challenges) that are present during their retirement. An example of a demand during an athlete’s transition might be overcoming an injury or developing an identity outside of sport. Next, Stambulova (2003) categorized athletes as those who had effective coping methods (i.e., knowledge, skills, motivation, social/financial support) or ineffective coping methods (i.e., interpersonal conflicts, difficulty making decisions, challenges combining social aspects, etc.). Based on this categorization, Stambulova (2003) coded athletes’ transitions as either successful transitions or crisis transitions. According to the model, if an athlete experiences a crisis transition, the athlete’s methods for coping may have been ineffective and they likely received no psychological interventions. Alternatively, when interventions are not present, there may be costs (i.e., decline in results, overtraining, injuries, etc.) where athletes are more likely to struggle to cope and adapt to their transition. For example, if an athlete can utilize their social support during their transition out of sport, they are less likely to need psychological interventions during the process. In the last two stages of the model, Stambulova (2003) proposed that it is important for athletes to seek out coping strategies interventions before and during the transition process, while coaches should be able to recognize and help facilitate psychological interventions when a crisis transition arises.

Since Stambulova (2003) created the model, researchers have found that no one factor is responsible for a positive or negative transition out of sport (Kadlcik & Flemr, 2008). From the original study during the development of athletic career transition model, Stambulova (2003)

noted four general themes after coding the data for the prevalence of crisis symptoms during athletic transitions using qualitative analysis. The categories that Stambulova (2003) identified were 1) decrease in the athlete's self-esteem, 2) chronic emotional discomfort, 3) increase in the athlete's sensitiveness to failures and number of psychological barriers, and 4) disorientation in decision making and behavior. Altogether, the athletic career transition model can help researchers understand what to expect in terms of an athlete's internal and external transitional demands, and it can guide practitioners or coaches on the purposeful use of resources for a more positive transition experience (Stambulova, 2003).

Utilizing the athletic career termination model (Taylor & Ogilvie, 1994) and the athletic career transition model (Stambulova, 2003) as a lens, Kadlcik and Flemr (2008) conducted qualitative interviews to examine the perceived transition experiences of 11 athletes (age 23 to 32; five women, six men) from various sports in the Czech Republic who had retired within the last 10 years. The researchers found no consistent reason for athletic retirement; however, they noted that pre-retirement planning simultaneously fits a pre-retirement condition (i.e., reasons for an athlete's retirement from sport, what they felt toward retiring from sport), rather than only a resource for adaptation as mentioned by Taylor and Ogilvie (1994). In a study by Kadlcik and Flemr (2008), athletes' reports indicated that pre-retirement factors (barriers vs. resources; non-acceptance, social support respectively) were important in determining whether their transition out of sport was a positive or negative experience. Overall, Kadlcik and Flemr (2008) noted that their findings corresponded more with the athletic career transition model because mediating factors were not divided into two facets, as in Taylor and Ogilvie's (1994) model (Stambulova, 2003); however, Kadlcik and Flemr (2008) found that both models aligned with their own data



regarding the characteristics of transition quality (i.e., crisis versus positive; transition distress versus healthy transition).

### ***Comparison of Transition Models***

Across conceptual career transition models, there are important similarities and differences. Regarding similarities, these three models recognize retirement as a process rather than a singular event, in both general and athletic populations, while identifying important internal and external factors that influence one's perceived control during the transition process. The external aspects referenced within these models and theory can be applied to athletic retirement, in addition to internal and interpersonal aspects of transition experiences, to explain why one athlete may have a positive experience while another may experience distress during career transition.

One of the most notable differences between the three models is that Schlossberg's (1981) human adaptation to transition model was created for a general population rather than sporting contexts. Next, Schlossberg (1981) highlighted three predominant factors that affect the development and outcome of the transition process, while Taylor and Ogilvie's (1994) model identifies interventions for athletes who experience retirement difficulties. Lastly, Stambulova's (2003) model is more of a decision tree, which helps researchers and practitioners to understand how factors will lead to different outcomes.

Despite a few differences, Schlossberg's (1981), Stambulova's (2003) and Taylor and Ogilvie's (1994) models can all help researchers conceptualize and contribute to understanding whether one's transition process is categorized as healthy or distressing (Alfermann & Stambulova, 2007; Taylor & Ogilvie, 1994). Overall, Schlossberg's (1981) model lacks multidimensionality that is needed to effectively study athletic retirement and the transition

process (Alfermann & Stambulova, 2007; Lavallee, 2000), whereas Taylor and Ogilvie (1994) and Stambulova (2003) developed models that specifically apply to athletic transition, and they emphasize individuality, while including the general influential variables associated with retirement. Because of this, sport specific models are used more frequently by researchers to conceptualize and help explain transitions out of a sporting context.

***Related Concept: Athletic Identity***

When examining the interpersonal factors that affect transition out of sport, it is important to consider an athlete's self-concept (i.e., internal domain-specific judgements of ability) and athletic identity, because these factors may contribute to the athlete's ability to cope with the transition process (Brewer et al., 1993). Brewer and colleagues (1993) defined *athletic identity* as "the degree to which an individual identifies with the athletic role" (p. 237). Athletic identity is recognized as a cognitive structure in the narrowest sense and a social role in the broadest sense (Brewer et al., 1993). As a cognitive structure, an individual's athletic identity guides and organizes their interpretation of specific events (i.e., injury) and how their functioning will be impacted. Taken as a social role, how an individual identifies as an athlete may be impacted by how family, friends, and coaches appraise them.

Similarly, Nasco and Webb (2006) propose that athletic identity includes both a public and private sector. Researchers have noted that the private dimension refers to attitudes, beliefs, feelings, and emotions that contribute to one's self-concept and identity, whereas the public dimension recognizes how other people perceive and judge individuals in a specific social role (Nasco & Webb, 2006). Using these dimensions, Nasco and Webb (2006) indicate the need to examine the multidimensional nature of how athletes respond to athletic transitions (Brewer et al., 1993; Nasco & Webb, 2006). Differences between the private and public sector are

embedded in the complexity of athletic identity and the hierarchy of *situated identities*, which can be explained as the ways that an individual communicates information about how they identify, through their behaviors and associations (Alexander & Weil, 1969; Webb et al., 1998). When an athlete retires or transitions out of sport, their social associations may change and thus their athletic identity may play a role in their experience.

Webb and colleagues (1998) hypothesized two primary factors that differentiate athletic transitions from other career retirements. First, the researchers explained that the extent of athletic identity, developed from early commitment to sport, has been shown to frequently lead to inflexibility in one's self-concept during and after their career. Second, researchers hypothesized that the extreme social visibility of athletes' success and failure differentiates athletics from most other career roles (Webb et al., 1998). Taken together, the extent of how much an athlete identifies with their sport may alter the athlete's self-concept and perceptions when their athletic career concludes. Additionally, Webb et al. (1998) found that involuntary retirement generally heightened the emotional response to the ending of one's career among male and female athletes in that involuntary athletic retirement was negatively correlated with life satisfaction, and positively correlated with retirement difficulty and uncertainty about the future. In general, they found that athletic retirement outcomes were associated with strong athlete identity and the level of control that an athlete felt in the decision to retire from athletics (Webb et al., 1998).

As detailed previously, theories on athletic transition explain various factors, like having control over one's transition, that may affect athletes' psychological outcomes during transition. Athletic identity also appears to play a role in athletes' reactions to transition, particularly when retirement is involuntary (Webb et al., 1998). Although many athletes retire on their own

volition, the examination of psychological outcomes associated with forced retirement will be the primary focus of this review, as this population seems to be most at risk for psychological distress and poor adjustment.

### **Reasons for Retirement from Sport**

At every level of sport, an athletes' reason for retirement can be categorized as either a forced or voluntary process. Researchers have noted that the predominant reasons for forced retirement are injury, deselection, and chronological age, with the recent addition of COVID-19 and the cancellation of athletes' seasons. In contrast, voluntary retirement is defined as free choice (i.e., lack of enjoyment, spend time elsewhere, etc.; Lavalley et al., 1997; Taylor & Ogilvie, 1994) or as a function of graduation, which is expected and normative (Alfermann & Stambulova, 2007). Notably, athletes who choose to retire from athletics are not excluded from negative experiences (Kaul, 2017).

### ***Athletic Retirement and Injury***

The inability to anticipate or expect a career-ending injury appears to intensify the difficulties associated with an athlete's forced retirement (Alfermann & Stambulova, 2007; Stokowski et al., 2019). Various researchers have used qualitative (i.e., interview or open-ended questionnaire) approaches while using the framework of the human adaptation model to examine transition experiences of injured athletes across various populations (i.e., Fortunato & Marchant, 1999; Kaul, 2017; Webb et al., 1998). Using grounded theory, Fortunato and Marchant (1999) collected contextual data by interviewing 30 elite Australian rules football players (gender not reported), to develop a theory about athletes who suffered a career-ending injury or deselection from their respective club in the past 18 months. Among the responses, some athletes reported bitterness, blame and feelings of being cheated from their inability to fulfill their athletic dreams.

Researchers found that athletes who were forced to retire due to injury would play again if given the opportunity and reported experiencing feelings of social withdrawal, fear, anxiety, and loss of self-esteem throughout their transition. Among another elite athlete population, Kaul (2017) sought to understand the reactions and coping mechanisms following a variety of career-ending injuries (i.e., ACL injury, ligament tears, wrist injury, etc.) of eight Indian former national and international-level athletes ( $M_{age} = 25.75$  years, gender not reported) who had been retired for between one to seven years. Kaul (2017) used open-ended interviews with questions that probed for athlete emotions, feelings and behaviors. Athletes reported negative feelings such as bitterness and anger, after experiencing injury, while others were hopeful to return to their sport. Most athletes engaged in physical rehabilitation to return to sport after injury, while the return to sport didn't always happen, but others who utilized coping mechanisms such as social support and staying distracted, reported a more positive transition out of sport (Kaul, 2017). Athletes who had a more positive experience, reported that their focus was initially on rehabilitation, which shifted and became predominantly directed toward work, school and self-care (Kaul, 2017).

Since early research on athletic transitions, researchers have continued to recognize the connection between athletic identity and the quality of athlete's transition out of sports. Using a quantitative design, Webb and colleagues (1998) examined forced career-ending injury, athlete identity, and respective transition experiences of 93 current and former student-athletes (45 females, 48 males;  $M_{age} = 22.4$  years) that attended University of Notre Dame and played a variety of sports. Participants reasons for retirement were categorized as injuries, being unable to compete at the next level (i.e., deselection), and choosing to retire from their sport. Researchers asked open-ended questions to assess the primary reason for retirement, their highest level of

competition, and how long they played their sport. Next, researchers used numeric surveys to assess the impact of athletic identity, psychological reactions to retirement, and dispositional variables (i.e., individual experiences) associated with retirement. In general, researchers found that forced retirement due to injury appears to be more challenging for individuals with high athletic identity (Webb et al., 1998). The researchers concluded that the unexpected nature of injuries does not allow for athletes to psychologically prepare and adjust for their retirement, leaving them stuck in the athlete role, furthered by the rare occurrence that injuries are recognized as career-ending right away. Overall, it appears that athletes whose careers ended abruptly due to injury consistently reported feeling fear, bitter, or lost following the realization that their athletic career was over (Webb et al., 1998).

In addition to career-ending injuries, athletes who have suffered injuries that hindered their performances, may not be retained on the roster (Webb et al., 1998). While each injury recovery process varies, Kaul (2017) and Webb et al. (1998) posit that injuries may not immediately be recognized as the end of one's career, thus leaving the athletes' career to the discretion of the coaches or severity of the injury. Although injury may not always be categorized as career-ending, injuries may reduce an athlete's level of play, which could lead to less playing time or deselection. Taken together, researchers have found that athletes who suffered a career ending injury had more negative reactions and experiences during their transition out of their sporting career compared to those who chose to retire (Kaul, 2017; Webb et al., 1998). However, these studies were limited by the relatively small sample sizes and the fact that researchers did not identify possible differences across demographic groups (i.e., did not report gender).

### ***Athletic Retirement and Deselection***

Another factor that has been examined as a predominant reason for athletic retirement is deselection (i.e., being cut from the team; Lavalley et al., 1997; Taylor & Ogilvie, 1994).

Although age is a predominant factor in reasons for athletic retirement, the physiological effects of age (Taylor & Ogilvie, 1994) and injuries that cause inadequate performance may lead to deselection (Fortunato & Marchant, 1999). Simply, coaches may deselect athletes who are incapable of progressing or contributing to competition at the next level (Taylor et al., 2006).

Researchers of two qualitative studies addressed the psychological experiences associated with being deselected (in addition to injury) using cross-sectional design (Brown & Potrac, 2009; Fortunato & Marchant, 1999). During the interviews, Australian elite soccer players who were deselected talked about their experiences in ways that revealed their distress, including the ways that they were informed of the decision (Fortunato & Marchant, 1999). Throughout this process, athletes who suffered career-ending injuries and deselection emphasized lack of perceived control and social support, which contributed to their transition difficulty (Fortunato & Marchant, 1999). Further, athletes who reported being deselected from their team were forced to acknowledge their performance short-comings, compared to those who suffer career-ending injuries, who would “never know” their potential (Webb et al., 1998, pp. 342). In line with Fortunato and Marchant (1999), Webb and colleagues (1998) also found that athletes who had decreased feelings of control over athletic transition also reported negative life satisfaction and low levels of self-esteem. Additionally, athletes’ reports indicated a connection between deselection and psychological distress, though these results should be interpreted cautiously because the researchers did not use validated measures of distress (Webb et al., 1998). More recently, Brown and Potrac (2009) examined the responses of four former elite adolescent male

soccer players (age 16-19 years old) from the United Kingdom. The former athletes had been part of a three-year scholarship program, which ended by receiving a full-time professional contract or being released from the club. Researchers used interviews to explore athletic identity, how deselection impacted sense of self, and how young athletes adapted to life outside of their sport. Brown and Potrac (2009) also aimed to recognize the intersectionality of individual, social, and cultural aspects of one's experiences. Athletes who were deselected from the team reported feelings of shock, anger, anxiety, humiliation, and despair. Similar to Webb and colleagues (1989), Brown and Potrac (2009) acknowledged that emotional disturbances may be attributed to the athletes' strong athletic identity when athletes' lives have revolved around soccer since they were young and have had little opportunity to expand other aspects of their identity. In general, Brown and Potrac's (2009) findings were limited by a relatively small, male only sample, while Fortunato and Marchant (1999) did not report gender, and all the studies were limited by the cross-sectional design.

Taken together, researchers have discovered themes across athletes who have been deselected and experience psychological symptoms of distress among various ages (Brown & Potrac, 2009; Fortunato & Marchant, 1999; Webb et al., 1998). While deselection is at the discretion of the coaching staff, athletes may experience the termination of their athletic season due to the COVID-19 pandemic, similarly to those who are deselected.

### ***Athletic Retirement and the COVID-19 Pandemic***

A third reason for forced athletic retirement in the extant literature on transition is a relatively recent and unique occurrence. In 2020, the Coronavirus (i.e., COVID-19) pandemic forced the retirement of high school and university level senior athletes across the world (Barcza-Renner et al., 2022). In some cases, eligibility was extended, and athletes had the choice to return



for one more year; however, uncertainty surrounded many factors contributing to eligibility. Athletes who were forced to retire prematurely may have experienced a “lack of closure” to their athletic career as a result of the uncertainty of the pandemic (Willis, 2021, pp. 69).

Given the novelty and relatively recent onset of the global pandemic, only a few researchers have examined the experience of athletes who were suddenly forced into retirement as a result (Barcza-Renner et al., 2020; Willis, 2021). Willis (2021) examined the career transition experiences of 72 (20-24 years old) former intercollegiate athletes who competed in Division I, II, and III athletics among 22 different sports. Of the participants, 50 identified as female, 18 identified as male, and 4 chose not to disclose. Of the sample, 40 participants reported that their transition occurred during COVID-19. Using inductive qualitative analysis on participants’ responses to open-ended online survey questions about transition, Willis (2021) identified losses and difficulties as higher order categories of themes that characterized participants’ transition experiences. More specifically, 25% of the sample reported that their retirement from athletics was unplanned, with COVID-19 as a top reason. Based on thematic patterns of athletes’ survey responses, Willis (2021) inferred that the athletes in the study with unplanned athletic retirement experienced more difficulties in the transition, including feeling a lack of closure in their college athletic career, than those who voluntarily retired. In addition to emotional challenges of unexpected transition, the pandemic also reportedly made it difficult for some participants to establish a career upon transition (Willis, 2021). Furthermore, Barcza-Renner and colleagues (2022) examined the experiences of three male NCAA Division II baseball players who were 22 to 23 years old and were forced to transition into retirement when the 2020 athletic season was cancelled due to the onset of the COVID-19 pandemic. The researchers used an interpretative phenomenological analysis (Shinebourne, 2011) to deconstruct

how individuals make sense of their personal and social world and associations with events. Interviews were structured with open-ended questions that asked about individuals' transition out of sport, support from others throughout the transition process, stress since retiring from sport, and current interests. Athletes reported immediate negative cognitive and emotional responses after learning of the cancellation of the 2020 season. For example, athletes reported feelings of hurt, shock and uncertainty of the future. Generally, athletes' responses changed to more positive over time and optimism was expressed, which may be due to learning of eligibility extensions, plans after graduation, or acceptance of a current injury which inhibited play. Some of the ways that athletes expressed a more positive outlook were feeling grateful for the years that they were able to play in college or the unexpected positives such as spending more time with family after being sent home from college. Social support also was mentioned as a contributor to more positive emotions throughout the process, in line with Alfermann and Stambulova (2007). Alongside the negative and positive responses to the cancellation, two of the three athletes expressed that the pandemic influenced more than their careers and recognized the tough decisions and difficulties for everyone.

In general, these studies provide an initial understanding of the influence that the pandemic has had on athletes, however, further examination of sudden athletic termination experiences is needed. The study conducted by Willis (2021) was limited in that most of the respondents were White and reported transitions before and during the COVID-19 pandemic. The timing of when athletes retired from their sport may have influenced the athletic retirement experiences. Moreover, Barcza-Renner and colleagues (2022) had a very small sample size which consisted of only males. Broadly, there were two main limitations in the studies in which researchers examined injury, deselection, and COVID-19. Primarily, the amount of time since

retirement varied greatly, possibly influencing the accuracy of athletes recalling their sport transition experience. Second, researchers did not analyze results by differing demographics (i.e., gender, sport type, race, etc.), limiting the generalizability of the results. Although researchers have found associations between involuntary retirement and psychological detriments, it is important to examine the psychological symptoms of non-elite adolescent athletes who reluctantly choose to leave athletics.

### ***Voluntary Athletic Retirement***

In contrast to the three predominant reasons for athletic career retirement previously mentioned, Taylor and Ogilvie (1994) recognize free choice as a fourth reason for athletic retirement. Additional reasons for retirement that are considered voluntary or normative are graduation, loss of passion for the sport, financial hardship, or advancing in other aspects of life (Alfermann & Stambulova, 2007).

Through use of cross-sectional qualitative interviews, researchers have found that not all voluntary athletic retirement transitions are positive (Kerr & Dacyshyn, 2000; Martin et al., 2014). Among a sample of seven gymnasts who were forced and voluntarily retired from gymnastics, Kerr and Dacyshyn (2000) found that five of the seven athletes reported negative thoughts, feelings, and behaviors with differing reasons for retirement; however, four of the seven gymnasts reluctantly chose to retire, two voluntarily retired because they were satisfied with their careers, and one was forced due to injury. For example, the athletes who reluctantly retired from gymnastics expressed that their career was “no longer enjoyable or positive” (Kerr & Dacyshyn, 2000, p. 122). Similar to the athlete who was forced to retire due to injury, the athletes who chose not to continue gymnastics also reported psychological difficulties. Overall, researchers found that the distinction between forced and voluntary retirement is unclear and

choosing to leave sport does not necessarily mean that athletes will have a transition free of challenges (Kerr & Dacyshyn, 2000).

Throughout the literature, researchers posit that when athletes perceive more control and plan for their athletic retirement, they will access resources more effectively than athletes who feel as though they do not have control over the reason for retirement (Alfermann et al., 2004; Kaul, 2017; Martin et al., 2014; Taylor & Ogilvie, 1994). Further, researchers have found that planning for career termination and perceptions of control can also increase feelings of general life satisfaction (Alfermann et al., 2004; Kadlcik & Flemr, 2008; Lang & Heckhausen, 2001; Martin et al., 2014). In the past decade, Martin and colleagues (2014) used a mixed method, longitudinal design to follow 62 athletes (45 females, 17 males) across five years, and who were between the ages of 14 and 36 ( $M_{\text{age}} = 21.61$ ,  $SD = 5.10$ ) at the time of the study. Additionally, all participants were provided with the opportunity to participate in the National Athlete Career and Education (NACE) program which provides workshops, career guidance, transition and educational support to Australian State and academy athletes. The participants naturally separated into three groups at baseline; those who had retired from elite sport ( $n = 16$ ), those who mentioned that they intended to retire before the study was over ( $n = 14$ ), and athletes who had no intentions of retiring before the end of the study ( $n = 32$ ). In other words, a subset of 16 participants in the study had retired from athletics at the time of the study; nine participants retired for involuntary reasons and five chose or expected to retire from sport, and two did not answer. All participants were given an athletic identity questionnaire and assessment of life satisfaction at baseline and after five years. Athletes who had already retired or had thoughts of retirement, were questioned about their reason for athletic retirement and then separated into involuntary and voluntary retirement groups at baseline. Martin and colleagues (2014) found a

negative relationship between athletic identity and satisfaction of life among the 16 athletes who chose to retire from athletics. Further, the voluntarily retired group reported higher levels of life satisfaction after five years than those who retired for involuntary reasons (Martin et al., 2014). Interestingly, neither involuntary nor voluntarily retired athletes showed decline in life satisfaction after retirement; researchers noted that this may be attributed to participation in the NACE program (Martin et al., 2014, p. 106). Altogether, researchers posit that the implementation of planning and support may be instrumental in improving athlete transition experiences.

Altogether, these studies are limited by relatively small sample sizes and that the researchers did not examine gender or other demographic differences. Overall, researchers have inferred that not every transition is perceived as negative, while not every voluntary athletic retirement is a positive experience (Kerr & Dacyshyn, 2000; Martin et al., 2014).

### ***Athletic Retirement and Flourishing***

Although there is conflicting evidence on the positive and negative experiences through one's athletic transition (Cecić Erpič et al., 2004), researchers have not often assessed athletes' levels of flourishing following voluntary and involuntary athletic termination. From a psychosocial perspective, *flourishing* occurs when an individual reports positive relationships, feels respected by others, and feels a sense of purpose in their life (Diener et al., 2010). Further, flourishing is said to occur when an individual feels that their needs of competence and relatedness are satisfied, and experience psychological flow and engagement (Diener et al., 2010). Although researchers have examined negative athletic transition experiences among those who are forced and expect to retire, there is merit to further examining athletes who may flourish by utilizing their available resources and planning for the transition out of athletics. If

researchers continue to only ask about negative mental health symptoms, they may incorrectly think that athletes only have neutral or negative experiences. Expanding on the reasons for retirement and psychological experiences, it is important to recognize psychological symptoms among athletes of various ages, genders, and from various populations.

### **Mental Health Outcomes Associated with Forced Retirement**

Overall, relatively few studies have quantitatively measured the mental health symptoms of athletes who retire due to involuntary reasons (Wilkinson, 2021). While examining previous research, it is evident that some athletes who were forced to retire experience psychological distress and adjustment difficulties throughout the transition period (Barcza-Renner et al., 2020; Blakelock et al., 2016; Fortunato & Marchant, 1999; Kaul, 2017; Webb et al., 1998; Wippert & Wippert, 2010). In contrast, other athlete samples reported a positive athletic transition process due to the use of coping resources (Kaul, 2017). During athletic retirement, athletes typically experience increased stressors, which impact their daily structure, sense of identity, and perceived control throughout their retirement process (Gouttebauge et al., 2017). Together, the utilization of available coping resources during the challenges presented during athletic retirement, may influence an athlete's quality of retirement from sport (Kaul, 2017; Stambulova, 2003; Stambulova et al., 2007).

Throughout the literature, researchers have primarily focused on the transition experiences of professional athletes (Brown et al., 2017; Fortunato & Marchant, 1999; Kaul, 2017; Oltmans et al., 2021), intercollegiate athletes (Barcza-Renner et al., 2020; Webb et al., 1998; Willis, 2021), and elite adolescent athletes (Blakelock et al., 2016; Brown & Potrac, 2009; Wippert & Wippert, 2010), with minimal research attention on non-elite adolescents. Yet, due to varying stressors, athletes of different ages and levels may experience differences in mental

health during and after transition. The next sections of this review summarize findings on mental health symptoms associated with the transition experiences among athletes at different levels of competition and age.

### ***Mental Health Symptoms Among Retired Professional and Collegiate Athletes***

Researchers have found common psychological detriments associated with forced retirement from athletics. Among professional and college athletes, researchers have examined mental health symptoms using quantitative survey methods with a combination of cross-sectional (Brown et al., 2017; DeFreese et al., 2022) and longitudinal designs (Brown et al., 2017; DeFreese et al., 2022) and longitudinal designs (Oltmans et al., 2021; Wipper & Wippert, 2010).

Through use of surveys and cross-sectional design, DeFreese and colleagues (2022) examined the mental health outcomes and transition-associated psychosocial factors among former National Football League (NFL) players with a mean age of 52.3 years ( $SD = 16.3$ ). Participants had been retired for an average of twenty-four years ( $SD = 15.56$ ) and 19% and 20% of athletes had been previously diagnosed with anxiety and depression, respectively. DeFreese and colleagues (2022) administered the depression and anxiety subscales from a mental and physical well-being scale. They found that autonomy and perceived control in the decision to retire were associated with fewer (i.e., more adaptive) anxiety and depressive symptoms. Notably, DeFreese et al. (2022) found that deselection and injury were commonly reported reasons for involuntary retirement for elite athletes, and athletes who retired for involuntary reasons and lacked retirement planning reported higher depression and anxiety scores. Similarly, Brown et al. (2017) performed a cross-sectional examination of the potential association between involuntary retirement and the prevalence of common mental disorders (CMD's) among 293 former male rugby players from France, Ireland and South Africa who were 38 years old on

average ( $SD = 5$ ). The researchers measured distress, symptoms of anxiety and depression using the General Health Questionnaire (GHQ-12; Goldberg & Williams, 1988) and the Four-Dimensional Symptom Questionnaire (4DSQ; Terluin et al., 2006), as well as measures of sleep disturbance and alcohol misuse. Additionally, the authors categorized participants based on their retirement status (forced or voluntary). The main finding of this study was that there was a positive association between forced retirement and distress, with the comorbidity (i.e., more than one simultaneously) of CMDs. Surprisingly, anxiety, depression, sleep disturbance and alcohol misuse were not found to be associated with forced retirement. The lack of associations between forced retirement and three of the four CMDs measured could either be a result of under-reporting or low prevalence within this specific cohort of athletes.

Rather than using a single point in time, Oltmans and colleagues (2021) conducted a three-point longitudinal study (baseline, 6 months, 12 months) to examine the prevalence and comorbidity of mental health symptoms and disorders measured by a distress screener, the GHQ-12 (Goldberg & Williams, 1988), and self-report measures of mental and physical well-being, sleep disturbance, and alcohol misuse. Researchers sampled 193 former elite Olympic athletes (49 males, 51 females,  $M_{age} = 50$  years old) who competed for the Netherlands and had been retired for an average of 17 years. Oltmans and colleagues (2021) also assessed the relationship between involuntary retirement, recent life events, and career dissatisfaction. Some athletes who reported forced retirement had alcohol misuse (7%), distress (13%), sleep disturbances (15%), disordered eating (20%), anxiety and depressive symptoms (28%); additionally, instances of concurrently experiencing two or three mental health disorders were approximately 7% and 4%, respectively. Researchers concluded that involuntary retirement was not associated with frequency of symptoms of mental health disorders within this sample. This finding may have



been affected by the small number of athletes in the involuntary retirement group (19%) and the prevalence of mental health symptoms at baseline. However, both groups of participants reported more symptoms of distress, anxiety/depression, and sleep disturbance within the first 15 years of retirement, whereas alcohol misuse and disordered eating were reported more evenly across the years since retirement. As a secondary objective, researchers assessed how the time since retirement correlated to perceived stressors, which was found to be related to mental health symptoms, as measured through a logistical regression. Similarly, Wippert and Wippert (2010) used a longitudinal design to focus on the consequences of involuntary career termination of former elite adolescents. Forty-two German national ski team athletes were included at baseline, and 21 were released from the team (17 forced, 4 voluntary; 6 males, 11 females) 10 days later. The involuntarily retired population of athletes ( $M_{\text{age}} = 19$  years;  $SD = 2$ ) and the voluntary group ( $M_{\text{age}} = 23$  years;  $SD = 6.4$ ) were assessed before selections, and then the 21 involuntarily retired athletes were again assessed ten days following selections, three weeks after, and again five and a half months after selections occurred. Across four time points, researchers assessed the development of psychopathological symptoms, locus of control, self-concept, and mood among the athletes who were dismissed from the team using a general symptom questionnaire. Researchers then used a mental health symptom checklist to assess how athletes understood their physical and mental health symptoms to restrict them in daily life. Researchers found that the 17 involuntarily dismissed athletes reported higher levels of distress, depressive symptoms, hostility, and psychoticism than the four athletes who chose to retire from athletics. Additionally, athletes who retired involuntarily, continued to experience low levels of self-efficacy to a lesser extent, more hostility, and greater overall distress five and a half months after baseline, than those who chose to retire.

Although researchers found positive associations between negative mental health symptoms and forced athletic retirement within a professional and college population, these studies are not without limitation. A primary limitation was the extensive time since retirement, potentially hindering the former athletes' ability to connect current mental health symptoms specifically to their athletic retirement. Second, mental health symptoms of participants were self-reported, leaving room for social desirability or fear of reporting. Lastly, gender differences were not examined and some were conducted on a single-gender samples (Brown et al., 2017, DeFreese et al., 2022), limiting the generalizability of these findings.

### ***Mental Health Symptoms Among Retired Elite Adolescent Athletes***

Researchers have examined mental health symptoms during athletic retirement transition among professional and college athlete samples, however, the mental health of young athletes who are deselected from their sport or suffer career ending injuries have seldom been studied. In general, about 85% of youth athletes do not receive intercollegiate athletic scholarships or the opportunity to continue their careers at the collegiate or professional levels (Brown & Potrac, 2009). Thus, most adolescent athletes retire prior to college-aged years.

Using a longitudinal design, Blakelock and colleagues (2016) surveyed psychological distress levels following deselection in a group of 91 elite adolescent soccer players across two athletic seasons (2011/2012 and 2012/2013). Researchers used the GHQ-12 (Goldberg & Williams, 1988) to measure levels of anxiety, depression, loss of confidence, and social dysfunction. This sample, drawn from English and Scottish Premier League and Football League soccer academies, had a mean age of 16.31 years ( $SD = 1.10$ ) old; researchers did not report the gender of the athletes. The GHQ-12 (Goldberg & Williams, 1988) was distributed to each athlete along three different time periods [pre-selection [T1], 1-2 weeks post-selection [T2], and 21 to

28 days post-selection [T3]]. One to two weeks after selection, athlete scores on the GHQ-12 (Goldberg & Williams, 1988) indicated that 35.7% of dismissed athletes experienced clinical levels of psychological distress, which further increased to 54.5% of athletes at the last measurement point (21-28 days). Additionally, players who were deselected reported greater and increasing levels of distress at post selection time points, than those who were retained (Blakelock et al., 2016). Lastly, researchers noted that mean scores on the GHQ-12 (Goldberg & Williams, 1988) decreased among the retained athletes from pre-selection to post selection time point two ( $M_{T1} = 1.49$ ,  $M_{T2} = 0.96$ ), while dismissed athletes mean scores increased at time point 2 ( $M_{T1} = 2.64$ ,  $M_{T2} = 3.82$ ) and remained heightened at time point 3 but were slightly lower ( $M_{T3} = 3.36$ ; Blakelock et al., 2016). Researchers found that an interaction between multidimensional factors (i.e., voluntariness, degree of control, career planning, support, etc.) may have contributed to athletes' appraisal of the threat, possibly influencing levels of distress. Overall, the findings indicate that deselection may have a negative influence on the mental health of younger athletes during an important developmental stage in life (Blakelock et al., 2016). However, based on examinations across multiple time points, Blakelock and colleagues (2016) found that symptoms of distress appeared to decrease over time among athletes who were forced to retire. Although researchers have revealed that mental health disturbances were present among adolescent athletes, these studies were limited by the small sample of elite, single sport athletes and the possibility of reporting bias. For example, those who experienced more extreme psychological distress, may have been more inclined to complete the survey in entirety (Blakelock et al., 2016). Although there is limited research among an adolescent population, the results from Blakelock and colleagues (2016) support the need for further examination of mental health symptoms among a non-elite population.

### ***Limitations of Past Studies on Mental Health Outcomes Associated with Forced Retirement***

Among quantitative studies where researchers assessed mental health symptoms, there were a few consistent limitations to note. A key limitation has been that participants were surveyed after an extensive amount of time since their sport retirement (DeFreese et al., 2022; Oltmans et al., 2021) which makes it difficult to determine if the reason for current mental health difficulties is at all connected to sport retirement specifically. Next, all of the studies that included professional, college, and elite adolescents did not assess potential gender differences in symptoms and only three studies used multi-gendered samples (Oltmans et al., 2021; Willis, 2021; Wippert & Wippert, 2010). So, it remains unknown if athletes of different genders experience mental health differences post-retirement (Afifi, 2007; Moskow et al., 2022).

While researchers have primarily focused on professional and collegiate populations, few researchers have examined elite adolescent athletes (Blakelock et al., 2016; Brown & Potrac, 2009). Additionally, there is no known literature on mental health functioning of adolescent athletes who do not achieve elite levels during or after high school athletics. It is important to examine the mental health of adolescents who transition out of non-elite sport because of the high number of individuals who compete in high school athletics, combined with the fact that the vast majority will not continue to compete after high school (NCAA, 2020). In addition, this population merits further exploration given that transition out of sport during the teenage years occurs during the stage in one's development when perceptions and identity are forming (Shlafer et al., 2014), which is the reason that findings on transition in adult athletes cannot be applied to this population. It appears likely that mental health may suffer for those who transition out of sport after high-school, given the occurrence of negative mental health symptoms during athletic transitions among other levels of sport (e.g., Cecić Erpič et al., 2004) and non-sport populations

(Afifi, 2007; Moskow et al., 2022); however, given the different stages of development, it cannot be assumed that findings will be the same in former athletes who competed at non-elite levels.

### **Summary and Conclusion**

Throughout the existing literature on athletic retirement, researchers have consistently found a link between the psychosocial quality of athletes' transition out of sport and the level of voluntariness in professional and collegiate athletes' choice to retire, with little known among non-elite adolescents. The purpose of the current study is to bridge the gap between understanding athletic transition experiences of professional, collegiate, and elite athletes, compared to non-elite former adolescent athletes. Additionally, previous researchers have seldom compared mental health levels between athletes who reported different reasons for retirement. In a review of the two studies conducted by Blakelock et al. (2016) and Brown and Potrac (2009), Wilkinson (2021) noted that injury/deselection and mental health were consistently reported among young academy soccer (i.e., English and Scottish Football) players following athletic career termination. With these general findings, researchers have acknowledged the importance of examining retirement experiences among former adolescent athletes who had not reached elite levels.

Given that negative mental health symptoms have been linked to forced athletic retirement among professional and collegiate athletes (Alfermann et al., 2004; Cecić Erpič et al., 2004; Lavalley et al., 1997), it is important to examine various reasons for retirement among a population that retired from adolescent-level sport. Additionally, there are few studies that report gender differences in mental health symptoms, while others examine single-gender sports or did not disclose the genders of participants. For example, Willis (2021), Oltmans et al. (2021), and Wippert and Wippert (2010) were the only researchers to examine mixed gender samples.

Throughout history, genders have been socialized in different ways throughout development, which may contribute to gender differences in the reporting of mental health disorders and challenges (Fagot et al., 2000; Seidler et al., 2016). Lastly, the majority of research has focused solely on the negative aspects of mental health following involuntary athletic retirement, without also assessing positive functioning such as flourishing. The absence of negative mental health symptoms is not necessarily a sign of positive functioning, so measures of flourishing are needed to determine which groups of former athletes are thriving post transition.

Within the current study, the current mental health functioning of former adolescent athletes who retired in the last three years was examined. As such, the purposes of the current study were to compare current mental health symptoms between athletes who were forced or expected athletic retirement, and to assess for possible gender differences. Additionally, possible differences in mental health functioning based on groups with different perceptions of control about their retirement and specific reasons for retirement were assessed. Lastly, athletes' positive psychological experiences after athletic retirement were assessed to further examine the quality of athletes' transitions out of sport.

## Introduction

Researchers have begun to consider athletic transitions, also termed sport retirement or sport transition, as a process that involves complex factors (Stambulova et al., 2007; Wylleman et al., 2004). There are various psychosocial reactions reported among retired athletes, however, less than 30% of athletes who retire, experience negative psychological symptoms when leaving their sport (Alfermann & Stambulova, 2007). Researchers' interest in examination of athletes' careers stemmed from the findings of professional and collegiate athletes who experience more severe psychological reactions (i.e., crisis transitions; Stambulova, 2017), although some athletes have reported positive experiences following athletic retirement (Brown et al., 2017; Oltmans et al., 2021, Wippert & Wippert, 2010). Researchers who study sport transitions have most often focused on professional and collegiate athletes, yet across the United States, only approximately 7% of high school athletes continue to play sports at the college level, while only 1-2% of college athletes will become a professional athlete (NCAA, 2020; [The Ohio State University, n.d.](#)). Further, the highest percentage of retired athletes are those in or recently out of high school (Aspen Institute, n.d.). Given that former elite athletes have reported both positive and negative athletic transitions, it is important to examine the ways that former adolescent athletes perceive a situation. Theoretically, attribution theory (Weiner, 1972) has helped researchers to understand the ways that an athlete may interpret their retirement from athletics and the extent that they believe they had control over their situation. Additionally, conceptual models specific to retirement have helped to further understand the process and the factors that contribute to one's retirement experience. To describe general non-sport retirement, Schlossberg (1981) created a framework to help other researchers understand career transitions and retirement experiences. Schlossberg (1981) postulated that there are three major factors (i.e., characteristics of the

transition environment, characteristics of the pre- and post-retirement transition environment, and characteristics of the individual) that influence an individual's retirement experience. To address sport retirement specifically, Taylor and Ogilvie (1994) and Stambulova (2003) purposed sport-career transition and retirement models that conceptualize the general stages and factors that frequently contribute to the ways that an athlete responds to their transition out of sport. Taylor and Ogilvie (1994) described the entirety of the athletic retirement process by identifying five facets, including the causes of athletic retirement, factors related to adaptation to retirement, available resources for retirement adaptation, quality of adaptation to retirement, and interventions for athletic retirement difficulties. More recently, Stambulova (2003) created the athletic career transition model to help conceptualize how athletes balance the challenges of the transition with the resources that are available to them. In this model, coping mechanisms are the key factor which determine whether athletes will either experience a positive transition, or a crisis transition that merits psychological intervention. Regardless of the target population of the models, each has helped researchers in the field to recognize transition as a multidimensional process, rather than a singular event (Schlossberg, 1981; Stambulova et al., 2003; Taylor & Ogilvie, 1994).

When examining transition experiences among various athlete populations, researchers have found that distress and mental health issues were mildly, but positively associated with forced (i.e., involuntary) retirement (Brown et al., 2017; DeFreese et al., 2022; Oltmans et al., 2021; Wippert & Wippert, 2010). For example, DeFreese and colleagues (2022) surveyed male former National Football League players who had been retired for an average of 24 years (average of 52.3 years old) and found that athletes who retired due to injury and deselection reported more anxiety and depressive symptoms than athletes who chose to retire. In a slightly



younger professional athlete sample, Brown et al. (2017) found that former male rugby players ( $M_{age} = 38, SD = 5$ ) who were forced to retire, reported significantly higher distress and higher mean scores on surveys of common mental disorders (CMDs) compared to athletes who chose to retire. Measuring across multiple timepoints, Oltmans and colleagues (2021) surveyed former male and female Olympic athletes who averaged 50 years old ( $SD = 15$  years). The researchers found that involuntarily retired elite athletes reported elevated mean scores of distress, anxiety, and depression within the first 15 years since retirement, compared to those who had been retired for more than 15 years. In a longitudinal study, Wippert and Wippert (2010) examined the mental health of a sample of male and female involuntarily retired elite athletes ( $M_{age} = 19$  years,  $SD = 2$ ) and voluntarily withdrawn elite athletes ( $M_{age} = 23, SD = 6.4$ ). In the study, involuntarily retired athletes reported higher levels of distress and symptoms of depression compared to the athletes who chose to retire, which continued to a lesser extent across follow-up timepoints. Altogether, it appears that elite level athletes who are forced to retire report more negative mental health symptoms than those who expect athletic retirement (Brown et al., 2017; Oltmans et al., 2021; Wippert & Wippert, 2010). As such, it is logical that athletes will experience similar patterns of negative mental health compared to non-athletes (Afifi, 2007; Moskow et al., 2022), and it is important to specifically examine gender and non-elite populations to be certain if similar or different patterns exist.

Given the prevalence of negative mental health symptoms among former professional athletes (DeFreese et al., 2022; Wippert & Wippert, 2010), it is important to note that the situational context of career termination differs at various ages and for athletes who retire for different reasons. For example, adolescence (ages 10 to 19 years old) is the stage in life where the most physical, cognitive, social, and emotional development occurs (World Health

Organization, 2023). This is also a time when individuals begin to understand themselves and their perceptions about the world around them (Shlafer et al., 2014). As such, it is important to examine how former adolescent athletes perceive control and if differences exist across gender. In Blakelock et al.'s (2016) longitudinal study among English and Scottish Premier soccer academies, athletes ( $M_{age} = 16.31$ ,  $SD = 1.10$ ) were surveyed before team selections were made, 1-2 weeks after team selections, and again 3-4 weeks after team selections. Athletes who were released reported clinical levels of distress at all three timepoints and researchers found that the degree of control and voluntariness, career planning, and athlete support systems were contributing factors. Using a qualitative method among a similar population of former adolescent elite male soccer players, Brown and Potrac (2009) noted that athletes reported feelings of depression, anxiety, anger, humiliation, and identity challenges throughout interviews. For these reasons, it is important to consider the detriments of deselection (Wilkinson, 2021) and other forced retirement reasons at this stage of life.

There are substantial gaps and limitations in the current and past literature that examine the mental health of athletes who are forced to retire. First, the time since retirement is extensive in the majority of studies on athletes' mental health after retirement (Brown et al., 2017; DeFreese et al., 2022; Fortunato & Marchant, 1999; Oltmans et al., 2021). With extensive time since retirement, so many different life altering variables could contribute to athletes' emotional experiences and affect their current levels of functioning. With a shorter timeframe since retirement, it is more likely that any reported negative mental health symptoms could be related to athletic retirement. Another limitation is that many studies primarily focused on single-gendered sports (Brown & Potrac, 2009; DeFreese et al., 2022; Kerr & Dacyshyn, 2000). Through comparing and analyzing responses of athletes of different genders, researchers may be

able to differentiate the emotional reactions and experiences, helping to create more specific transition planning. Further, researchers would be able to provide greater generalizability through examination across diverse demographics.

When discussing athletic transition experiences, it is important to note that not every forced transition is perceived as negative (Alfermann & Stambulova, 2007; Fortunato & Marchant, 1999; Kaul, 2017; Stambulova et al., 2007), and not every voluntary transition is positive (Kerr & Dacyshyn, 2009). However, Taylor and Ogilvie (1994) noted that three out of the four main reasons for athletic retirement typically have diminished perceptions of control and may create a threatening environment. Additionally, previous researchers seldom recognized or measured positive variables, such as levels of flourishing, following athletic careers. To further understand if there are differences among athletes who retired as adolescents, the current study included research questions related to positive mental health symptoms and perceptions of control. It is important to specifically examine this population because adolescence is a critical developmental stage of life (Shlafer et al., 2014) and if there are differences in mental health patterns between professional and non-elite athletes, they could inform future athletic retirement interventions.

To address the limitations of previous research identified above, the researcher of the current study will examine psychological symptoms following forced and expected athletic retirement from former non-elite adolescent athletes' primary sport. An athlete's primary sport was defined as the sport(s) that one played at the highest level during their adolescent (i.e., 10-19) years. Moreover, the researcher of the current cross-sectional study will examine a large, diverse sample to increase generalizability of findings. To further understand if current negative mental health symptoms are different depending on one's broad reason (forced or expected) for

retirement from sport, mental health symptomology within three years of athletic retirement will be assessed. Finally, the current study will include analyses that take into account different reasons for athletic retirement (i.e., injury, deselection, Covid-19, or expected) and different genders (i.e., cisgender men, cisgender women, and transgender/non-binary individuals), which could help practitioners, coaches, and parents recognize at risk groups and may be helpful in providing more individualized coping mechanisms. Throughout previous literature, researchers have focused primarily on professional and intercollegiate athletes, with few empirical studies among adolescents; more specifically, those who do not achieve elite status.

The purposes of the current study are: 1) to determine if there are group differences in current negative mental health (i.e., stress, anxiety, and depression) symptoms between former adolescent athletes who were forced to retire and those who expected their athletic retirement, 2) to determine if there are any gender differences (i.e., cisgender women, cisgender men, and transgender/non-binary individuals) in current negative mental health symptoms between those who were forced to retire and those who expected retirement 3) to assess if there are any group differences in current negative mental health symptoms between those who experienced forced athletic retirement, for different reasons (i.e., injured vs. deselected vs. seasons ended due to COVID -19), and 4) to examine if there are differences in current negative mental health symptoms between athletes based on three levels of perceived control (yes, no, somewhat) over retirement. A final purpose was to determine if there are group differences in flourishing between participants who were forced to retire and those who expected their athletic retirement.

The study had the following hypotheses: 1) it was predicted that former adolescent athletes who had forced reasons for retirement would have more negative mental health symptoms than those who expected to retire, 2) a prediction on gender differences was not made

given that this was the first study to specifically assess gender differences in mental health symptoms of retired adolescent athletes, 3) a prediction was not made on which forced group of former adolescent athletes would show more negative mental health symptoms because of limited research studies based on the COVID-19 pandemic, 4) it was predicted that former adolescent athletes who reported having perceived control over their reason for retirement would experience fewer negative mental health symptoms than those who perceived only some or no control over their retirement, and 5) it was predicted that the group who expected retirement would have higher flourishing scores than the group who was forced to retire.

## **Method**

### **Participants**

Participants in the current study consisted of 347 former adolescent athletes who were recruited from universities, community colleges, and technical colleges across the United States. The sample ranged in age from 18-22 years old ( $M_{\text{age}} = 19.94$ ,  $SD = 1.20$ ) and consisted of 231 men (66.6%), 94 women (27.1%), 15 transgender/nonbinary (TNB) individuals (6.3%), and 7 (2%) participants who did not disclose gender. See Table 1 for additional demographic information of the entire sample. The participants formerly competed in a wide variety of sports (see Table 2 for sport background information of entire sample) with an average reported sport career length of 3.36 years ( $SD = 2.32$ ) and an average of 14 months since competing in the final competition of their primary sport. Of the entire sample, 199 (57.3%) reported that they perceived control over their retirement, 103 (29.7%) did not perceive control over retirement, 44 (12.7%) felt that they had some control, and 1 (.3%) did not disclose their perception of control. For subgroup analyses, participants were divided into groups based on reason for retirement; one group was forced to retire (i.e., non-normative or unexpected transition) from their primary sport

( $n = 150$ ; 43.2%), and the other group expected (i.e., graduation; chose to retire) retirement ( $n = 197$ ; 56.8 %). See Table 3 for sport demographics of the subgroups. Participants forced to retire were further divided into three groups based on retirement reason, which included career-ending injury/illness, deselected (i.e., cut) from their team, and those whose seasons were ended because of the COVID-19 pandemic. Participants forced to retire reported an average age of 19.86 years ( $SD = 1.26$ ), sport careers that lasted an average of 3.29 years ( $SD = 2.17$ ) and 12.3 months ( $SD = 6.63$  months) on average since their final competition in their primary sport. The group of athletes who expected athletic retirement reported an average age of 19.99 years old ( $SD = 1.15$ ), an average career length of 3.41 years ( $SD = 2.43$ ), and an average of 15.36 months ( $SD = 7.95$ ) since competing in the final competition of their primary sport.

**Table 1.***Gender and Race Demographics*

Variable	<i>n</i>	Percentage
<b>Gender</b>		
Cisgender men	231	66.6
Cisgender women	94	27.1
Transgender men	5	1.4
Transgender women	5	1.4
Agender	2	.6
Non-binary	1	.3
Gender fluid/Queer	2	.6
Missing data	7	2
<b>Race/Ethnicity</b>		
American Indian/Alaskan Native	36	10.4
Asian or Asian American (including Indian subcontinent and Philippines)	13	3.7
Black or African American (including Africa and Caribbean)	35	10.1
Hispanic or Latino/Latina/LatinX (including Spain)	18	5.2
Native Hawaiian or Other Pacific Islander	6	1.7
White or European American	211	60.8
Arab/Middle Eastern	2	.6
Prefer not to respond	1	.3
Missing data	25	7.2

**Table 2.***Sport Demographics of Entire Sample*

Variable	<i>n</i>	Percentage
Sport type		
Alpine skiing	4	1.2
Baseball	34	9.8
Basketball	89	25.6
Bowling	18	5.2
Competitive cheer/dance	24	6.9
Cross country running	14	4
Equestrian	12	3.5
Fencing	10	2.9
Field hockey	8	2.3
Football	29	8.4
Golf	1	.3
Gymnastics	17	4.9
Ice hockey	6	1.7
Lacrosse	6	1.7
Nordic skiing	1	.3
Rowing	5	1.4
Rugby	15	4.3
Swimming & diving	10	2.9
Track & field	14	4
Soccer	4	1.2
Softball	5	1.4
Tennis	5	1.4
Volleyball	9	2.6
Water polo	4	1.2



Variable	<i>n</i>	Percentage
Wrestling	3	.9
Level of competition		
Competed only for high school	135	38.9
Competed only on a team outside of high school	150	43.2
Competed for high school and outside of high school	62	17.9
Reasons for retirement		
Illness/injury	77	22.2
Deselection	32	9.2
COVID-19	41	11.8
Graduation	116	33.4
Not enjoying it anymore	35	10.1
Wanted to spend time elsewhere	46	13.3

**Table 3.**

*Demographics of Forced and Expected Retirement Subgroups*

Variable	Forced		Expected	
	<i>n</i>	Percentage	<i>n</i>	Percentage
Gender				
Cisgender men	98	65.3	133	67.5
Cisgender women	40	26.7	54	27.4
Transgender men	4	2.7	1	.5
Transgender women	2	1.3	3	1
Agender	1	.6	1	.5
Non-binary	0	-	1	.5
Gender fluid/ queer	1	.6	1	.5
Missing data	4	2.7	3	1.5
Sport type				
Alpine skiing	2	1.3	2	1

Variable	Forced		Expected	
	<i>n</i>	Percentage	<i>n</i>	Percentage
Baseball	13	8.7	21	10.7
Basketball	46	30.7	43	21.8
Bowling	12	8	6	3
Competitive cheer/ dance	18	12	6	3
Cross country running	6	4	8	4.1
Equestrian	3	2	9	4.6
Fencing	3	2	7	3.6
Field hockey	3	2	5	2.5
Football	12	8	17	8.6
Golf	0	-	1	.5
Gymnastics	6	4	11	5.6
Ice hockey	2	1.3	4	2
Lacrosse	2	1.3	4	2
Nordic skiing	1	.7	0	-
Rowing	2	1.3	3	1.5
Rugby	4	2.7	11	5.6
Soccer	4	2.7	0	-
Softball	1	.7	4	2
Swimming & diving	0	-	9	4.6
Tennis	0	-	5	2.5
Track & field	3	2	11	5.6
Volleyball	1	.7	8	4.1
Water polo	2	1.3	2	1
Wrestling	3	2	0	-
Setting				
Competed only for high school	40	26.7	95	48.2
Competed only outside of high school	77	51.3	73	37.1

Variable	Forced		Expected	
	<i>n</i>	Percentage	<i>n</i>	Percentage
Competed for high school and outside of high school	33	22	29	14.7

## Instrumentation

### *General Health Questionnaire- 12 (GHQ-12)*

The GHQ-12 (Goldberg & Williams, 1988, see Appendix B) is a 12-item measure of psychological distress, including symptoms of anxiety, depression, loss of confidence and social dysfunction (Goldberg et al., 1997; Hardy et al., 1999). There are various ways to score and interpret the GHQ-12. In the current study, the 12 items were measured on a 4-point Likert scale of *less than usual* (0), *no more than usual* (1), *rather more than usual* (2), and *much more than usual* (3) for the negative items, and from *much more than usual* (0) to *less than usual* (3) for the positively worded items. Although some researchers have utilized a bimodal scoring method, in which *less than usual* and *no more than usual* are scored as zeros (for negative items) while *rather more than usual* and *much more than usual* are given a score of one (Blakelock et al., 2016; Hardy et al., 1999), other researchers have found that a Likert scale provided a more accurate distribution of scores among a youth population compared to using bimodal scoring method (Politi et al., 1994). To continue, the GHQ-12 can be scored unidimensionally by calculating a total score, or by finding the mean of responses to all items (after reverse scoring the negatively worded items). In past studies, the unidimensional GHQ-12 was found to be valid and reliable, with adequate internal consistency (e.g., Cronbach's alpha = 0.88; Hardy et al., 1999). However, in the current sample, the total score GHQ-12 had inadequate internal consistency (Cronbach's alpha = 0.55). Other researchers have found that the GHQ-12 is more

effectively used by dividing the items into two subscales, one for Social Dysfunction (items 4, 7, 8, 12) and one for Anxiety/Depression (items 6, 9, 10, 11); however, cut off scores for clinical levels of distress on the subscales have not been clarified (Kalliath et al., 2004). Based on past interpretations of the GHQ-12 mean scores and using the Likert method with response options from 0-3, a mean score of 2 or greater indicates the presence of distress. In the current study, alpha levels for the two subscales of Social Dysfunction (Cronbach's alpha = 0.74) and Anxiety/Depression (Cronbach's alpha = 0.75) had acceptable levels of internal consistency. Given the improved alpha levels when assessed as subscales, only the means of the two subscales were used in the current study's analyses, rather than the total score.

#### ***The Generalized Anxiety Disorder Scale - 7 (GAD-7)***

The GAD-7 (Spitzer et al., 2006) is a seven-item questionnaire that measures the severity of generalized anxiety based on symptoms in the past two weeks, with a 4-point Likert scale anchored at *not at all* (0) and *nearly every day* (3; see Appendix C). Total scores range from 0-21; scores greater than or equal to 5 indicate mild symptoms, scores greater than or equal to 10 indicate moderate symptoms, and scores greater than or equal to 15 indicate severe anxiety symptoms (Spitzer et al., 2006). In past studies, elevated scores were strongly associated with functional impairment (Spitzer et al., 2006). The internal consistency was excellent in past research (Cronbach's alpha = .92) and there was agreement between self-report and clinician-administered versions of the scale (Spitzer et al., 2006). The internal consistency of the GAD-7 in the current study was good (Cronbach's alpha = 0.80).

#### ***The Center for Epidemiologic Studies Depression Scale Revised (CESD-R-10)***

The CESD-R-10 (Andresen et al., 1994) is a shortened version of the original CES-D (Radloff, 1977), which consisted of 20 items; both versions measure the presence and frequency

of depressive symptomology (see Appendix D). The CESD-R-10 consists of 10 items to assess the prevalence of symptoms, each with a 4-point Likert scale ranging from *rarely or none of the time* (0) to *all of the time* (3). A score is determined after reversing the positive mood questions and summing all item scores. Scores can range from 0-30 on the CESD-R-10, with scores greater than or equal to 10 representing depressed mood among older adult and adolescent populations (Haroz et al., 2014); however, the CESD-R-10 is not used to clinically diagnose depression (Andresen et al., 1994). The CESD-R-10 has shown good internal consistency (Cronbach's alpha = .86 and composite reliability of 0.72) across various populations (Mohebbi et al., 2018). In the current study, the CESD-R-10 had acceptable internal consistency (Cronbach's alpha = 0.7).

### ***The Flourishing Scale (FS)***

The FS (Diener et al., 2010; see Appendix E) assesses aspects of human function pertaining to positive relationships, feelings of competence, and one's sense of purpose in life. The scale includes eight items, rated on a 7-point Likert scale, anchored at *strong disagreement* (1) to *strong agreement* (7), which are all positively phrased. The total score is determined by summing the scores reported on each item. The scores from the Flourishing Scale can range between 8-56, with higher scores indicating more positive human functioning. Previous researchers have found this scale to be a valid self-report assessment of overall psychological well-being and reliable with a Cronbach's alpha of .87 (Diener et al., 2010). In the current study, the FS was found to have very strong internal consistency (Cronbach's alpha = 0.91).

### ***Demographics***

Participants responded to items regarding age, gender, ethnicity, time since retirement, primary sport, reason for athletic retirement, and feelings of control (see Appendix F).

## **Procedure**

Following approval from the Institutional Review Board (IRB; see Appendix G), the primary researcher used random stratified sampling to recruit a nation-wide sample of former adolescent athletes. The researcher used a random number generator to randomly select 10 schools from each of the three NCAA Divisions, as well as 10 community colleges, and 10 technical colleges. The researcher initially sampled 50 schools; however, six of the technical colleges had permanently shut down or contact information was not accessible, therefore six more colleges were randomly selected from the same category. Once schools were selected, the researcher contacted the dean/director of student life and residential life department/student housing directors through email, with the survey link attached (see Appendix H) and asked them to distribute the survey link to first year student residents. The survey link was also posted and advertised on social media platforms directed toward various student groups and users of the applications (i.e., Facebook, Instagram, Twitter; see Appendix I).

Each method of distribution included a link to the anonymous online survey hosted by Qualtrics. When participants clicked the link, they were first presented with an inclusion criteria survey (see Appendix J). Inclusion criteria were that participants must: a) be 18 years or older, b) have competed on a sports team during high school (but no longer compete in their primary sport), and c) stopped playing within the last 36 months. If participants met inclusion criteria, they continued on to read and agree to an electronic informed consent form (see Appendix K), and then proceeded to the surveys.

Based on responses to the demographic questionnaire (specifically, the question: “What was the main reason you stopped participating in your primary sport?”), participants were divided into two groups; those who expected to retire from athletics (i.e., graduation, spend time

elsewhere, not enjoying it anymore, etc.), and those who were unexpectedly forced to retire from athletics (i.e., injury, deselection, cancellation of season due to COVID-19). After completion of the study, participants could enter their email into a separate survey for a chance to win one of five, \$20 Amazon e-gift cards.

A total of 1221 participants provided consent and completed at least some of the surveys; survey responses from people who were over 22 years old (as this would likely indicate that it had been more than 36 months since their final high school competition), as well as responses that were incomplete or duplicate submissions (i.e., identical answers) were eliminated.

Participants identified their gender out of 10 gender categories. Due to the small numbers of participants who identified with non-cisgender categories, the researcher used the groupings of cisgender men, cisgender women, and transgender/non-binary (TNB) individuals for all gender-related analyses.

### **Data Analysis**

The data was analyzed using version 28 of SPSS software. To answer the first and second research questions, the researcher completed two multivariate analyses of variance (MANOVAs); the first independent variable was reason for retirement, which consisted of two levels: forced and expected athletic retirement. The second independent variable was gender, which consisted of three levels: cisgender men, cisgender women, and transgender/non-binary individuals. The dependent variables were distress (GHQ-12 subscales of anxiety/depression and social dysfunction), anxiety (GAD-7), and depression (CESD- R-10). To answer the third research question, the researcher used a second MANOVA on the subset of participants who retired for forced reasons; the independent variable was reason for forced retirement, which consisted of three levels: injury/illness, deselection, and cancellation of season due to COVID-

19. The dependent variables were again levels of distress, anxiety, and depression. To answer the fourth research question, the researcher performed a multivariate analysis of variance (MANOVA) to examine if there were differences in the occurrence of mental health symptoms (same dependent variables as analyses described above) of retired athletes, based on three levels of perceived control over their athletic retirement (yes, no, somewhat). Effect sizes were calculated using Cohen's (1988) partial eta squared ( $\eta_p^2$ ), which classifies .01 as a small effect, .06 as a medium effect, and .14 as a large effect. To examine flourishing, the researcher used an independent samples t-test with forced and expected athletic retirement as the two levels of the independent variable, and scores on the Flourishing Scale as the dependent variable. Effect size for the independent samples t-test was calculated using Cohen's *d* (Cohen, 1988), which classifies 0.2 as a small effect, 0.5 as a medium effect, and 0.8 as a large effect.



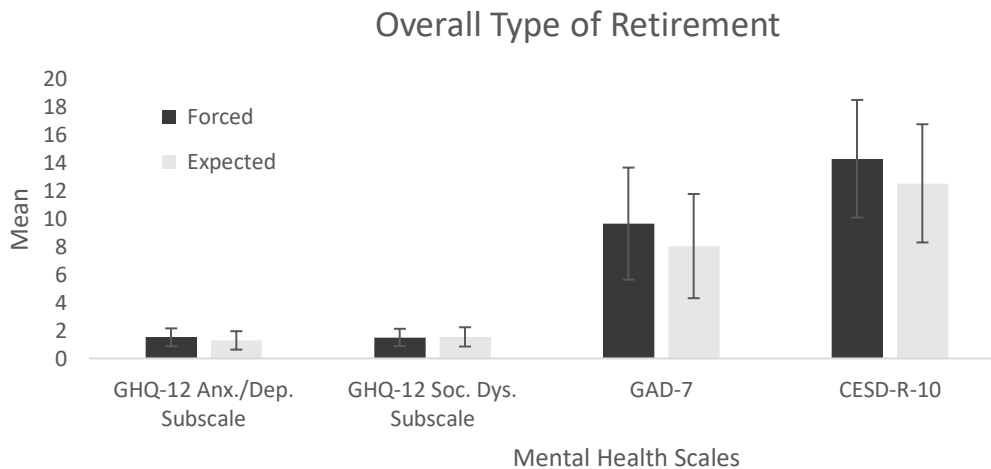
## Results

### Differences in Mental Health Symptoms by Overall Type of Retirement

A one-way multivariate analysis of variance (MANOVA) revealed statistically significant multivariate effects between athletes with different reasons (forced vs. expected) retirement on the grouped dependent variables [Wilke's Lambda = .93,  $F(4, 342) = 6.87$ ,  $p < .001$ ;  $\eta_p^2 = .07$ ]. Former athletes who were forced to retire reported higher anxiety/depression on the subscale of the GHQ-12 [ $F(4, 342) = 9.40$ ,  $p = .002$ ,  $\eta_p^2 = .03$ ], as well as higher generalized anxiety symptoms [ $F(4, 342) = 14.90$ ,  $p < .001$ ,  $\eta_p^2 = .04$ ], and depressive symptoms [ $F(4, 342) = 14.91$ ,  $p < .001$ ,  $\eta_p^2 = .04$ ] than athletes who expected retirement (see Figure 1 for means and standard deviations). The only multivariate result that was not statistically significant between groups was for the social dysfunction subscale of the GHQ-12 [ $F(4, 342) = .26$ ,  $p = .608$ ,  $\eta_p^2 = .001$ ].

**Figure 1**

*Mental Health Scores for Forced and Expected Retirement Groups*



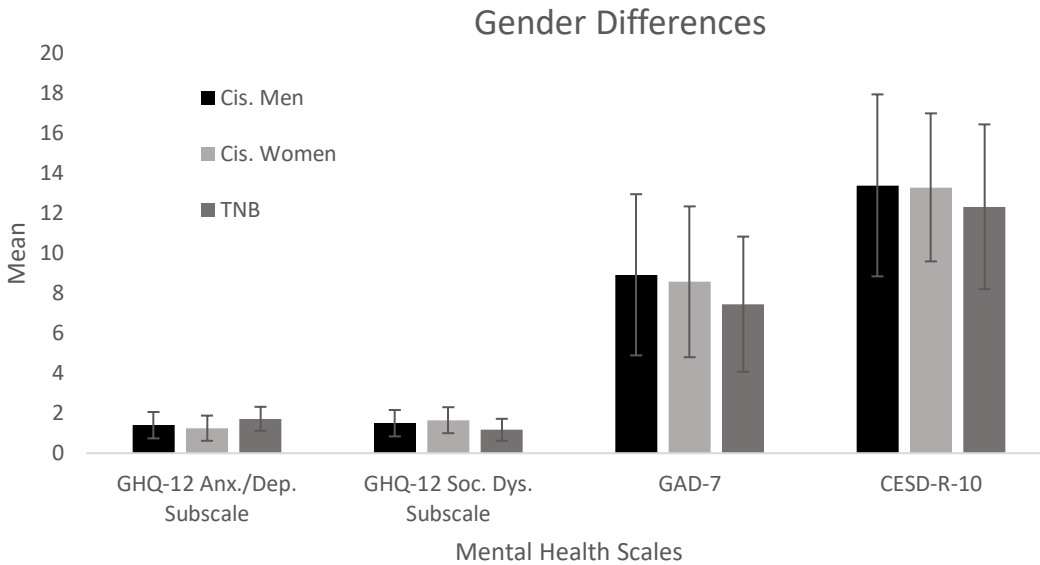
*Note:* Error bars represent the standard deviation of the mean.

## Gender Differences in Mental Health Symptoms

Another one-way MANOVA revealed statistically significant multivariate effects between athletes of different genders (cisgender men, cisgender women, transgender/non-binary individuals) on the grouped dependent variables [Wilke's Lambda = .95,  $F(8, 682) = 2.26$ ,  $p = .022$ ,  $\eta_p^2 = .03$ ]. On Levene's Test for Equality of Error Variances, the CESD-R-10 (depression symptoms) violated the assumption, therefore a more conservative alpha level of .0125 was set for the dependent variable of depressive symptoms. There were small differences, as indicated by effect sizes, in the groups on the two GHQ-12 subscales of social dysfunction [ $F(2,344) = 5.07$ ,  $p = .007$ ,  $\eta_p^2 = .03$ ] and anxiety/depression [ $F(2, 344) = 5.19$ ,  $p = .006$ ,  $\eta_p^2 = .03$ ]. Post hoc comparisons using the Tukey HSD test indicated that the mean scores for TNB individuals on the anxiety/depression subscale of the GHQ-12 were higher, but with small effect size ( $p = .006$ ,  $\eta_p^2 = .03$ ), compared to cisgender women. On the social dysfunction subscale of the GHQ-12, the mean scores of cisgender women were higher, with small effect size ( $p = .006$ ,  $\eta_p^2 = .03$ ), compared to TNB individuals. The results on the GAD-7 [generalized anxiety;  $F(2, 344) = 1.50$ ,  $p = .224$ ,  $\eta_p^2 = .01$ ] and CESD-R-10 [depression;  $F(2, 344) = .62$ ,  $p = .541$ ,  $\eta_p^2 = .004$ ] were not statistically significant. See Figure 2 for means and standard deviations.

**Figure 2**

*Mental Health Scores for Gender Groups*



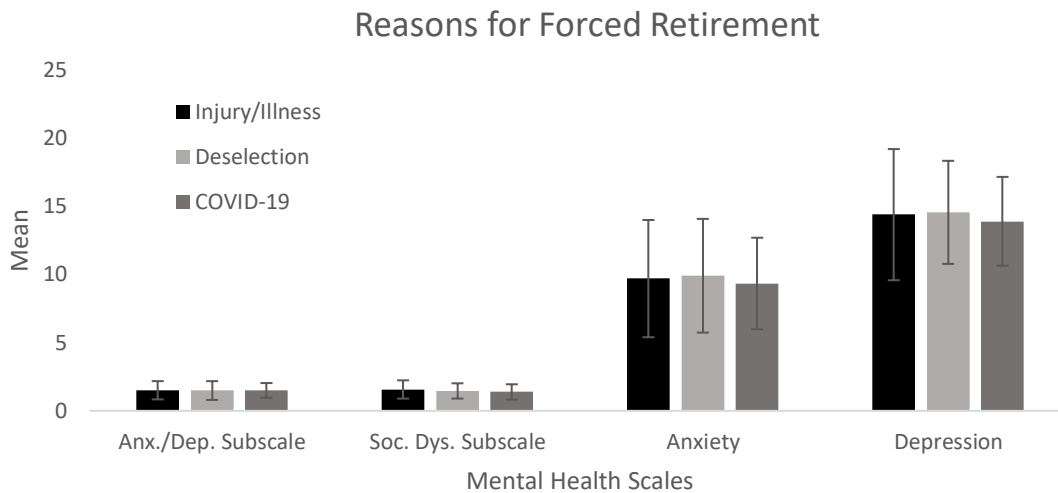
*Note:* Error bars represent the standard deviation of the mean.

**Mental Health Symptoms and Specific Forced Reasons for Forced Retirement**

A third one-way MANOVA did not indicate statistically significant differences between reason for retirement subgroups (illness/injury, deselection, COVID) on the grouped dependent variables [Wilke's Lambda = .98,  $F(8, 288) = .42$ ,  $p = .911$ ,  $\eta_p^2 = .01$ ].

**Figure 3**

*Mental Health Scores for Different Forced Retirement Reason Subgroups*



*Note:* Error bars represent standard deviation of the mean

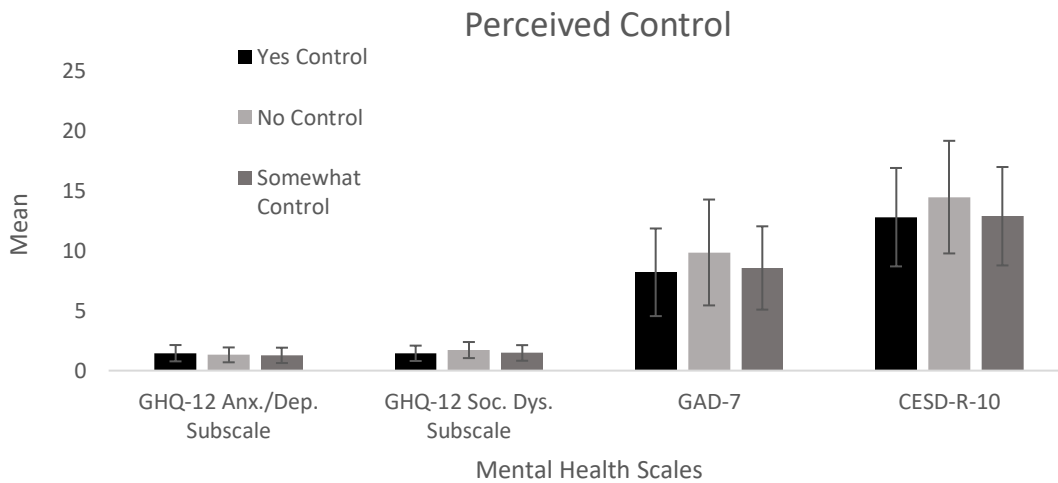
### **Mental Health Symptoms and Perceived Control**

A fourth one-way MANOVA revealed statistically significant multivariate effects between athletes with different levels of perceived control (yes, no, somewhat) on the grouped dependent variables [Wilke's Lambda = .94,  $F(8,680) = 2.89$ ,  $p = .004$ ,  $\eta_p^2 = .03$ ]. Former athletes who reported perceived control over the reason for retirement reported statistically significant differences in social dysfunction [ $F(2, 343) = 6.21$ ,  $p = .002$ ,  $\eta_p^2 = .04$ ], generalized anxiety symptoms [ $F(2, 343) = 6.28$ ,  $p = .002$ ,  $\eta_p^2 = .04$ ], and depressive symptoms [ $F(2, 343) = 5.43$ ,  $p = .005$ ,  $\eta_p^2 = .03$ ]. The only univariate result that was not statistically significantly different was the anxiety/depression subscale of the GHQ-12 [ $F(2, 343) = 2.29$ ,  $p = .102$ ,  $\eta_p^2 = .01$ ]. Post hoc comparisons using the Tukey HSD test indicated that the mean scores of former

athletes who perceived somewhat control and no control reported higher social dysfunction ( $p = .002$ ,  $\eta_p^2 = .03$ ) than former athletes who perceived control. For generalized anxiety symptoms, the mean scores of former athletes who reported somewhat and no control were higher ( $p = .002$ ,  $\eta_p^2 = .04$ ) compared to former athletes who perceived control over the reason for retirement. The mean depressive symptoms among former athletes who perceived somewhat control and no control were higher ( $p = .005$ ,  $\eta_p^2 = .03$ ) compared to individuals who perceived control over the reason for retirement. Despite reaching statistical significance, the actual differences in mean scores between groups were quite small based on effect sizes.

**Figure 4**

*Mental Health Scores for Perceived Control Subgroups*



*Note:* Error bars represent the standard deviation of the mean.

### **Reason for Retirement and Flourishing**

An independent samples t-test revealed statistically significant higher reported scores on flourishing among athletes who expected athletic retirement ( $M = 40.30$ ,  $SD = 7.58$ ) compared to those who were forced ( $M = 37.37$ ,  $SD = 9.10$ ) to retire [ $t(345) = -3.28$ ,  $p = .001$ , two-tailed]. The

magnitude of differences in the means (mean difference = -2.93, 95% CI [-4.69 to -1.17]) were small in effect size ( $d = 0.35$ ).

**Table 4.**

*Descriptive Statistics for Mental Health Measures*

Variable	GHQ-12: Anx./Dep.		GHQ-12: Soc. Dysfunc.		GAD-7		CESD-R-10	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
General reason for retirement subgroups								
Forced	1.51	.64	1.50	.62	9.65	4.01	14.29	4.21
Expected	1.29	.66	1.54	.69	8.04	3.73	12.53	4.23
Gender subgroups								
Cisgender men	1.40	.66	1.50	.66	8.92	4.03	13.39	4.55
Cisgender women	1.25	.63	1.65	.65	8.57	3.77	13.29	3.70
Transgender/Non-binary	1.72	.60	1.17	.55	7.45	3.38	12.32	4.12
Specific retirement reason subgroups								
Injury/illness	1.51	.67	1.57	.67	9.70	4.29	14.39	4.82
Deselection	1.49	.69	1.46	.56	9.91	4.17	14.56	3.78
COVID-19	1.50	.54	1.39	.56	9.34	3.36	13.90	3.26
Perceived control subgroups								
Had control	1.45	.68	1.44	.64	8.19	3.65	12.78	4.10
No control	1.31	.62	1.71	.67	9.84	4.41	14.45	4.69
Somewhat	1.27	.64	1.47	.65	8.55	3.47	12.86	4.10

## **Discussion**

Broadly, this study's purpose was to explore the current mental health of former adolescent athletes who had expected or been forced to retire from their primary sport in the past three years. Athletic retirement experiences have previously been explored among intercollegiate, professional (Brown et al., 2017; DeFreese et al., 2022; Oltmans et al., 2021; Wippert & Wippert, 2010) and elite adolescents (Blakelock et al., 2016; Brown & Potrac, 2009), however, this was the first quantitative study to include a sample of non-elite former adolescent athletes and it was also the first to compare the mental health functioning of retired athletes of different genders. There were two notable strengths of the current study. First, participants in the current study took the mental health measures closer to their retirement date than samples frequently have in previous studies (DeFreese et al., 2022, Oltmans et al., 2021). Second, the age and career length averages were similar between the subgroups (forced vs. expected retirement), indicating that they were suitable comparison groups. Overall, the results of four out of the five research questions were statistically significant.

### **Forced vs. Expected Athletic Retirement**

The hypothesis that athletes forced to retire would have more negative mental health symptoms than those who expected retirement, was supported, with a medium effect size for the grouped mental health variables. This overall finding aligns with studies conducted by Alfermann et al. (2004), Cecić Erpic et al. (2004), and Stambulova et al. (2007) though it contradicts others (Brown et al., 2017; Oltmans et al., 2021). In general, it is possible that athletes who were forced to retire experienced more negative mental health symptoms than those who expected it, given the lack of preparation and suddenness of their transition. Previous researchers have found that voluntariness and perception of control were important aspects in the

quality of an athlete's transition out of sport (Taylor & Ogilvie, 1994, Webb et al., 1998). Broadly, attribution theory can be used to conceptually explain how a person's affect and motivation may be impacted by a particular event (i.e., forced or expected retirement; Weiner, 1972). For example, Webb and colleagues (1998) noted that forced retirement does not allow athletes to prepare or begin to create an identity outside of sport. The results of Lally's (2007) study further support the current findings that forced retirement can impact psychological functioning and may even extend to crisis transitions (Stambulova, 2017).

Unfortunately, mental health scores in the current study, specifically on the GHQ-12 are difficult to compare to past studies because Blakelock et al. (2016) used a total mean score on the GHQ-12 (i.e., the unidimensional method) and also used a bimodal scoring method. The Likert method was used in the current study, because Politi et al. (1994) found that Likert scoring and the use of two subscales was more accurate to examine different dimensions of distress among a population of 18-year-old males. As such, more studies are needed among a non-elite adolescent population with the scales and scoring method used in the current study to confirm the mental health functioning of athletes who were forced into athletic retirement.

More specifically, former athletes in the current study who were forced to retire reported mean scores of the GHQ-12 that fell below the cut off of 2.0 as an indicator of distress, but their mean fell between the "no more than usual" and "rather more than usual" distress options for respondents. Similarly, results on the GAD-7 indicated that athletes who were forced to retire reported moderate levels of generalized anxiety (mean score of 9.7, which is close to the clinical cut off of  $\geq 10$ ), while the expected retirement group's score was lower (mean of 8.0). This difference between groups is not surprising given similar findings from previous studies among professional athletes (DeFreese et al., 2022; Oltmans et al., 2021). Based on mean depression



scores in the current study, it appears that both groups reported depressed mood (scores  $\geq 10$  indicate depressed mood), which is understandable given the general prevalence of anxiety and depression among college populations (Moskow et al., 2022). However, those who were forced to retire reported higher mean scores compared to those who expected retirement. One possible explanation for elevated depression could be related to the fact that the most common primary sport in the sample was basketball. One way in which this may have impacted the results is that basketball is one of the most popularly viewed and celebrated sports in the United States (Grundy et al., 2014). As such, retiring from such a popular sport may have been difficult for these athletes who lost their athlete status, perhaps even more for those who did not expect retirement. Notably, the CESD-R-10 is not considered a clinical measure of depression (Andresen et al., 1994), so further examinations of clinical depressive symptoms are needed in retired non-elite adolescent athlete samples.

Although negative mental health symptoms were reported by both groups of former athletes in the current study, there are a few possibilities as to why there were not larger group differences. Researchers have found that athletes who expected but reluctantly retired from athletics have also reported psychological difficulties (Kerr & Dacyshyn, 2000). Further, the reason for retirement may not always be clear as to whether it is forced or expected. For example, a coach may create an environment that is no longer enjoyable, and the athlete feels that their only option is to retire, which was their choice but may still lead to a more negative transition out of sport. A second reason is that the stress of moving away to college or other life events may have increased the overall negative mental health among all participants in the sample. Lastly, the researcher targeted only former athletes who were currently attending college; if the sample had included those who did not attend college there may have been more

pronounced group differences. In other words, participants who retired and attended higher education could have begun to expand their social network and interests following athletic retirement, which may have minimized feelings of distress. Finally, the lack of larger group differences may again be related to the sport demographics of the sample. In the current study, approximately one quarter of the sample reported basketball as their primary sport. This is a sport in which large, unorganized competitions (i.e., pick-up games) continue to contribute to high participation in the sport, even without a formal league (Grundy et al., 2014). As such, there is a possibility that athletes who played basketball and retired (either forced or expected) from their team, continue to play in an unorganized fashion and might be functioning better than other types of athletes psychologically since they continue to have a social outlet.

### **Gender Differences**

A second purpose of this study was to assess potential gender differences in current mental health functioning of participants. Within the sample, negative mental health symptoms were different among gender subgroups following athletic transition; however, the differences were small. Previous researchers have found that the intensification of traditional gender roles begins in adolescence and may further help to explain gender differences in mental health symptoms (Priess et al., 2009). In the current study, one possible explanation for the reason that women reported higher levels of social dysfunction compared to transgender/non-binary (TNB) individuals and cisgender men could be the different ways that women internalize social gender roles and cope with changes following stressful events (Matud et al., 2015). Additionally, TNB individuals in the current study reported higher mean anxiety/depression scores on the GHQ-12 subscale compared to cisgender women, which is not surprising given that transgender and

gender diverse individuals frequently report higher negative mental health symptoms and severity compared to cisgender individuals (Stanton et al., 2021).

Overall, it is important to note that there were not significant differences between cisgender women and cisgender men, and they accounted for the largest groups. However, given the high percentage of men in the sample (66.5%), there is a possibility that negative mental health was underreported due to stigma and perceptions of weakness that men appear to experience (Delenardo & Terrion, 2014). It is also possible that negative mental health mean scores would have been higher if the sample consisted of mostly cisgender women, given that females are more likely to self-report mental health compared to men (Doherty & Kartalova-O'Doherty, 2010; Matud et al., 2015). Taken together, it appears that gender differences in negative mental health exist but may be quite small. More studies are needed among former non-elite and adolescent athletes to confirm gender differences following athletic retirement.

### **Type of Forced Retirement**

A third purpose of the study was to assess differences in mental health functioning by the type of forced retirement. There were not significant differences between the groups forced to retire due to injury/illness, deselection, or cancellation of one's season due to COVID-19. Although a hypothesis was not made before analysis, it is surprising that there were no differences given the different ways that athletes may assign attributions (Weiner, 1972) for the cause of retirement. For example, athletes who are deselected must acknowledge their performance shortcomings, while athletes who are injured may question various things that they could have done to prevent getting hurt but may still feel confident in their athletic abilities and maintain high self-regard. Yet, the findings suggest no differences in these groups' current mental health functioning. Throughout the literature, negative mental health symptoms have

been reported among samples of athletes who have been injured (Brown et al., 2017; Kaul, 2017; Webb et al., 1998) and/or deselected (Blakelock et al., 2016; Brown & Potrac, 2009; Fortunato & Marchant, 1999; Wippert & Wippert, 2010), however, the current results indicate that the reason for forced retirement may not be important, rather it is the overall population of athletes forced to retire that seems to have higher levels of negative mental health symptoms. Thus, practitioners do not need to worry as much about the reason for forced retirement, instead, it is more important to know the distinction between forced and expected athletic retirement and be able to provide resources to both groups.

Broadly, the COVID-19 pandemic likely influenced many if not all participants, in various ways, which may have changed how they experienced their retirement and their mental health. Because of this, there is a possibility that studying a similar sample prior to the pandemic may have afforded different results given that rates of anxiety and depression have increased since the onset of the pandemic (National Institutes of Health, 2023). In other words, it is possible that former athletes in the current study began experiencing negative mental health symptoms during the pandemic, rather than as a result of their athletic retirement. Additionally, even if an athlete did not have their season cancelled, it may have changed their overall psychological experience during that time. For example, an athlete may have been deselected, but then shortly afterward the entire school's sports season was cancelled due to the pandemic; thus, the person may have felt less threatened or affected specifically by deselection. To further support the finding that the type of forced retirement does not play a role, more examinations of non-elite adolescent athletes who are closer to their retirement, are needed, outside of the pandemic period.

## **Perceived Control**

As hypothesized, athletes who did not perceive control over the reason for their retirement from sport reported higher negative mental health symptoms on three of the four negative mental health measures compared to those who perceived at least somewhat control; however, the differences were small. More specifically, athletes in the current study who perceived no control reported mild anxiety and a high degree of depressed mood based on the mean threshold score of 10 for each, identified by Spitzer et al. (2006) and Andresen et al. (1994) respectively. This finding was not surprising given that Taylor and Ogilvie (1994) posited in their conceptual framework of athletic retirement that the absence of control during important events may create a more threatening environment for the athlete. Additionally, Cecić Erpič and colleagues (2004) found that former Olympic level athletes who perceived less control reported more negative mental health symptoms during their transition out of sport compared to athletes who perceived control. Although the results of the current study indicated differences in responses between athletes with different levels of perceived control, it is important to clarify that the magnitude of difference was small, as measured by effect size, suggesting that perception of control over retirement played a minimal role in the presence of negative mental health symptoms in the current sample. As such, this finding contrasts assertions from attribution theory that perceptions of control are critical (Weiner, 1972) because they are proposed to relate to how someone understands their ability to change the current situation and utilize the resources that are available. More specifically, Alfermann et al. (2004), Cecić Erpič et al. (2004), and Stambulova et al. (2007) have found that athletes who perceived more control over the reason for retirement, reported a more positive transition experience. In the current study, one explanation for the lack of subgroup (i.e., yes, no, somewhat) differences in negative mental health

symptoms on the anxiety/depression subscale of the GHQ-12 could be due to issues with the sensitivity of the scale in measuring specific symptoms and disagreements on how to score it, given that the differences in group means on the other mental health scales were small, but statistically significant. As such, further examination of perceived control following athletic transition and the use of consistent scoring and interpretation is needed among former adolescent athletes.

### **Flourishing**

The finding that athletes who expected retirement reported higher levels of flourishing compared to those who were forced to retire supported the hypothesis and aligned with the overarching hypothesis that expected retirement would be related to more positive psychological experiences and better mental health. Although there were group differences in the current sample, it is important to note that the athletes who expected retirement had been retired slightly longer (15.36 average months) than those who were forced to retire (12.30 average months). Therefore, one explanation for the group differences could be that athletes who expected retirement had slightly longer to adjust and cope with the athletic transition. In a previous qualitative study, Lally (2007) found that some athletes flourished through self-exploration following retirement and began to diminish the prominence of athlete identity before retirement. In other words, the athletes in Lally's (2007) study predicted and expected their retirement, which was not the case for all athletes in the current study. A second reason is that flourishing may be a result of attributing a sense of control during retirement (Weiner, 1972). Taylor and Ogilvie (1994) posited that perceived control may also contribute to human functioning and self-competence outside of sport. Lastly, it appears that both groups of retired adolescent athletes in the current study had relatively high levels of flourishing, with mean scores near the higher end

of the possible score range (8-56). Given the recruitment method used, only former athletes who attended colleges in the United States were sampled. A reason for the relatively high levels of flourishing among the current sample of former adolescent athletes could be because they continued on to higher education and perhaps felt more purpose and direction following athletic retirement than those who did not attend college.

One somewhat contradictory finding from the current student is that participants appeared to be flourishing, yet they also reported negative mental health symptoms. One explanation for this contradiction may be that items on the flourishing scale are assessed by social aspects and sense of purpose in life, rather than internal feelings. In other words, it is possible this sample of adolescents who retired, continued to develop friendships, pursue higher education, and considered themselves to be generally successful, while simultaneously and privately experiencing mental health difficulties. Overall, it may be of importance for researchers to further examine what contributes to athletes' flourishing following athletic retirement to further educate coaches, athletes, and administrators on ways to cope with athletic retirement.

### **Limitations**

Although there were strengths of the current study, it was not without limitations. Primarily, the method of survey distribution may have impacted who responded to the study. For example, using broad email requests and relatively public social media postings (i.e., personal and school group Facebook pages) hindered the ability to control who completed the survey or verify their past athlete status. A second limitation was the cross-sectional design. It would have been preferable to examine baseline mental health measures of athletes before retirement and across changes in mental health throughout their experience, given that Blakelock and colleagues (2016) saw reductions in negative mental health symptoms as time increased since retirement for

an elite athlete sample. A third limitation was the inability to measure all factors that may influence the presence of negative psychological symptoms following athletic retirement. For example, the researcher in the current study did not specifically measure athletic identity as a mediating factor, however, previous studies have related the extent of one's athletic retirement to be related to the ways that athletes cope during the transition out of sport (Lally, 2007; Webb et al., 1998). Next, although participants in this study completed measures closer to the time of their retirement than past samples, it was still an average of over one year since retirement, thus various events could have contributed to mental health functioning. It would be preferable to examine the positive and negative mental health of adolescent athletes directly after athletic retirement. A final limitation was that the current study was limited to adolescents who continued on to college, therefore limiting the generalizability of the results to only those who pursue higher education.

### **Conclusions and Future Directions**

The present study expanded on the current literature on mental health among athletes who have transitioned out of athletics, by adding findings on a sample of non-elite former adolescent athletes. Past research has found that negative mental health symptoms are prevalent following injury and deselection among collegiate, professional (Brown et al., 2017; DeFreese et al., 2022; Kerr & Dacyshyn, 2000; Oltmans et al., 2021; Wippert & Wippert, 2010), and elite adolescent populations (Blakelock et al., 2016; Brown & Potrac, 2009). The results of the current study supported previous findings that athletes with forced reasons for retirement and lower perceptions of control reported higher negative mental health scores than athletes who expected retirement and felt control (DeFreese et al., 2022; Fortunato & Marchant, 1999; Webb et al., 1998), as well as lower flourishing. Importantly, although there were statistically significant



findings in the current study, the effect sizes were only small to medium in each instance. Therefore, group differences in mental health symptoms may not be meaningfully different in terms of practical application.

Overall, given the sample's mean scores on mental health measures, it appears that negative mental health symptoms do not only occur among athletes who retire as adults. In recent years, Certified Mental Performance Consultant (CMPC) and sport psychology services are more frequently being offered at the intercollegiate and professional level. However, based on previous (Blakelock et al., 2016; Lally, 2007; Taylor & Ogilvie, 1994; Webb et al., 1998) and current findings, it appears that non-elite adolescent athletes could benefit from psychological services and career planning for coping with life after sport. In general, cause and effect could not be drawn between athletic retirement and mental health symptoms in this study however, the findings of the current study support the need for expanding mental health services offered among a non-elite population of adolescent athletes.

In future studies, researchers should examine former adolescent athletes closer to or at the time of athletic retirement, in addition to measuring across various timepoints. If there are group differences in mental health, future researchers can then be more certain that symptoms are because of one's retirement. Further, it may be helpful to assess mental health at several time points following athletic retirement, given the possibilities that mental health can either improve or develop into a crisis transition (Stambulova, 2017). Another factor that may be important to consider in future research is the examination of sport type and the ways that co-acting or individual sport athletes may experience differences in mental health after athletic retirement, given findings that there are differences in depression scores between the groups during their competitive careers (Martignetti et al., 2020). Lastly, it is important to implement more positive

mental health measures in future studies. Only approximately 30% or fewer athletes experience negative mental health during athletic retirement (Alfermann & Stambulova, 2007; Mannes et al., 2019); it is important to gather data from individuals who experience athletic retirement more positively to determine how they cope, with the aim to introduce similar skills among populations who experience transition more negatively. In general, both positive and negative mental health data is important because the absence of negative mental health does not mean that former athletes are doing well.

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## **Appendix A**

### **Journal of Applied Sport Psychology**

All parts of the manuscript should be typewritten, double-spaced, with margins of at least one inch on all sides. Articles will be no more than 30 double-spaced pages in length for quantitative submissions and 35 for qualitative submission (including tables, figures and references). They should also include a title page, a 250-word abstract, 50-word lay summary, up to three implications for practice and complete references. Lay summaries should be included after the abstract and key words. Insert a line space after the abstract, and then include a heading (Lay Summary:) and then the lay summary text. Implications for Practice should be included after the lay summary. Insert a line space after the lay summary, and then include a heading (Implications for Practice:) and then finally the text in bullet point format. The title of the manuscript should reappear on the first page of the text. Authors should also supply a shortened version of the title suitable for the running head, not exceeding 50 character spaces. The discussion section of the manuscript should provide suitable attention to the applied implications arising from the findings of the work. Research notes with novel or interesting descriptive quantitative or qualitative data (15 pages including references, tables, figures, 100-word abstract) are welcomed submissions.

Manuscripts, including tables, figures and references, should be prepared in accordance with the Publication Manual of the American Psychology Association (Seventh Edition, 2020). Manuscripts which do not adhere to these guidelines will be returned to the authors on submission.

Authors are to avoid the use of sexist, racist, and otherwise offensive language. Where relevant the cultural characteristics of any sample population studied should be described in the participant section of the method. Manuscript copies should be clear and legible, and all figures must be camera ready.

## Appendix B

### General Health Questionnaire-12 (GHQ-12)

Instructions: We would like to know if you have had any medical complaints, and how your health has been in general, over the past few weeks. Please answer ALL the questions simply by selecting the answer which you think most nearly applies to you.

**Remember that we want to know about present and recent complaints, not those you had in the past.**

Much more than usual	Rather more than usual	No more than usual	Less than usual
0	1	2	3

Have you recently...

1. Been able to concentrate on what you're doing \_\_\_\_\_
2. Lost much sleep over worry? \* \_\_\_\_\_
3. Felt you were playing a useful part in things? \_\_\_\_\_
4. Felt capable of making decisions about things? \_\_\_\_\_
5. Felt constantly under strain? \* \_\_\_\_\_
6. Felt you couldn't overcome your difficulties? \* \_\_\_\_\_
7. Been able to enjoy your normal day-to-day activities? \_\_\_\_\_
8. Been able to face up to your problems? \_\_\_\_\_
9. Been feeling unhappy and depressed? \* \_\_\_\_\_
10. Been losing confidence in yourself? \* \_\_\_\_\_
11. Been thinking of yourself as a worthless person? \* \_\_\_\_\_
12. Been feeling reasonably happy, all things considered? \_\_\_\_\_

## Appendix C

### Generalized Anxiety Disorder 7-item (GAD-7) Scale

Over the *last two weeks*, how often have you been bothered by the following problems?

Not at all                      Several days                      More than half the days                      Nearly every day

0    1    2    3

1. Feeling nervous, anxious or on edge.
2. Not being able to stop or control worrying.
3. Worrying too much about different things.
4. Trouble relaxing.
5. Being so restless that it is hard to sit still.
6. Becoming easily annoyed or irritable.
7. Feeling afraid as if something awful might happen.



## Appendix D

### Center for Epidemiologic Studies Depression Scale Revised (CESD-R-10)

Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week by checking the appropriate box for each question.

Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	All of the time (5-7 days)
0	1	2	3

1. I was bothered by things that usually don't bother me. \_\_\_\_\_
2. I had trouble keeping my mind on what I was doing. \_\_\_\_\_
3. I felt depressed. \_\_\_\_\_
4. I felt that everything I did was an effort. \_\_\_\_\_
5. I felt hopeful about the future.\* \_\_\_\_\_
6. I felt fearful. \_\_\_\_\_
7. My sleep was restless. \_\_\_\_\_
8. I was happy.\* \_\_\_\_\_
9. I felt lonely. \_\_\_\_\_
10. I could not "get going". \_\_\_\_\_

## Appendix E

### Flourishing Scale (FS)

Instructions: These questions are designed to measure your self-perceived success in important areas such as relationships, self-esteem, purpose, and optimism. Below are eight statements with which you may agree or disagree. Using the scale below, indicate your agreement with each item.

Strongly agree	Agree	Slightly agree	Mixed; neither agree nor disagree	Slightly disagree	Disagree	Strongly disagree
7	6	5	4	3	2	1

1. I lead a purposeful and meaningful life.
2. My social relationships are supportive and rewarding.
3. I am engaged and interested in my daily activities.
4. I actively contribute to the happiness and well-being of others.
5. I am competent and capable in the activities that are important to me.
6. I am a good person and live a good life.
7. I am optimistic about my future.
8. People respect me.

## Appendix F

### Demographic Questionnaire

1. What is your current age in years? \_\_\_\_\_ years
  
2. What is your gender identity? Check all that apply.  
Man \_\_\_\_\_ Woman \_\_\_\_\_ Transgender man \_\_\_\_\_ Transgender woman \_\_\_\_\_  
Agender \_\_\_\_\_ Non-Binary \_\_\_\_\_ Two-Spirit \_\_\_\_\_ Gender Fluid/Queer \_\_\_\_\_  
Prefer not to answer \_\_\_\_\_ Other (please explain) \_\_\_\_\_
  
3. What race/ethnicity(s) do you identify with? Check all that apply.  
\_\_\_\_\_ American Indian or Alaska Native  
\_\_\_\_\_ Asian or Asian American (including Indian subcontinent and Philippines)  
\_\_\_\_\_ Black or African American (including Africa and Caribbean)  
\_\_\_\_\_ Hispanic or Latino/Latina/Latinx (including Spain)  
\_\_\_\_\_ Native Hawaiian or Other Pacific Islander  
\_\_\_\_\_ White or European American  
\_\_\_\_\_ Arab/Middle Eastern  
\_\_\_\_\_ Other (please explain) \_\_\_\_\_  
\_\_\_\_\_ Prefer not to respond

4. Which of the following was the primary sport that you played during your high school years?

“Primary sport” is defined as the sport(s) that you played at the highest level during your high school years. Check only one.

Basketball \_\_ Baseball \_\_ Beach Volleyball \_\_ Bowling \_\_ Competitive Cheer or Dance \_\_ Cross  
Country \_\_ Equestrian \_\_ Fencing \_\_ Field Hockey \_\_ Football \_\_ Golf \_\_ Gymnastics \_\_  
Half/Full Marathon \_\_ Ice Hockey \_\_ Track and Field \_\_ Lacrosse \_\_ Rifling \_\_ Rowing \_\_  
Rugby \_\_ Swimming and Diving \_\_ Skiing \_\_ Soccer \_\_ Softball \_\_ Tennis \_\_ Volleyball \_\_  
Water Polo \_\_ Wrestling \_\_ Other (please specify) \_\_\_\_\_

5. What was the highest level that you played your primary sport during high school?

\_\_\_\_\_ Varsity

\_\_\_\_\_ Junior varsity

\_\_\_\_\_ Freshman/Sophomore Team

\_\_\_\_\_ I only played sports hosted outside of my high school.

6. Which of the following best describes your sport background?

\_\_\_\_\_ I played/engaged in my primary sport by competing for my high school.

\_\_\_\_\_ I played/engaged in my primary sport during high school, but did not compete for my high school (i.e., I played club sports or on travel teams).

\_\_\_\_\_ I played/engaged in my primary sport for both my high school and for a club/travel team outside of my high school.

7. Referring to your primary sport, how many years total did you compete? \_\_\_\_\_

8. How long ago was your last competition in your primary sport from high school? Answer in months (i.e., 18 months ago; 9 months ago): \_\_\_\_\_ months.

9. What was the main reason you stopped participating in your primary sport?

\_\_\_\_\_injury

\_\_\_\_\_illness

\_\_\_\_\_deselection (i.e., cut from a team)

\_\_\_\_\_Covid-19 (i.e., my season was cancelled due to Covid-19)

\_\_\_\_\_graduation (i.e., I knew that I would be done playing due to high school graduation)

\_\_\_\_\_not enjoying it anymore

\_\_\_\_\_wanted to spend time elsewhere

\_\_\_\_\_ Other, please explain. \_\_\_\_\_

10. Did you feel that you had control over the reason you stopped participating in your primary sport?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

\_\_\_\_\_ Somewhat

## Appendix G

### Western Washington University IRB Notification

**To:** Lindsay Ahmann

**Faculty Advisor:** Dr. Jessyca Arthur-Cameselle

**Project Title:** An Examination of Mental Health Symptoms Between Forced and Voluntarily Retired Former High School Athletes

**Protocol Number:** WWU013.2023

**Date:** 2.13.2023

The Western Washington IRB has determined that the study referenced above qualifies for Exemption as defined by 45 CFR 46.101(b) Categories of Exempt Human Subjects Research.

#### Exempt Category 2

This exemption is given under the following conditions:

1. The research will be conducted according to the protocol. *Please be sure to use any IRB approved recruitment, informed consent forms or information letters.*
2. The research will be conducted in accordance with the ethical principles of Justice, Beneficence, and Respect for Persons, as described in the Belmont Report, as well as with federal regulations and University policy and procedure.
3. All research personnel remain up to date with CITI training through data collection.
4. IRB approval will be obtained **prior to making any modifications** that change this research project. This includes changes to study personnel, research participants, recruitment methods, compensation, consent process procedures or documents, or changes in study materials that deviate from the approved scope.
5. All research records will be maintained in accordance with [WWU's guidelines for document retention](#).
6. The IRB will be promptly informed of any issues that arise during the conduct of the research, such as adverse events, unanticipated problems, protocol deviations, or any issue that may increase the risk to research participants.

Thank you for your attention to these details. If you have questions at any point, please contact a Research Compliance Officer.

## Appendix H

### Recruitment Email

Hello,

My name is Lindsay Ahmann and I am a graduate student in the Sport and Exercise Psychology program at Western Washington University. I am running a study on the thoughts and feelings of former high school athletes who have stopped playing their main sport.

I am looking for individuals who are 18 years or older, who graduated high school within the last 3 years, and who played on a sports team in high school but *no longer* play their main sport at any level. In other words, I am looking for individuals who do not currently play in a recreational league, on a club team, or other organized competitions in the main sport that they played in high school.

I would be very grateful if you would forward this email or share the survey link to those who may qualify. Link: [https://www.az1.qualtrics.com/jfe/form/SV\\_b1PnaqpcpWTtaXY](https://www.az1.qualtrics.com/jfe/form/SV_b1PnaqpcpWTtaXY)

Taking the surveys is voluntary and can be stopped at any time. The surveys will include questions about sport history, mental health, general well-being, and other background questions and will take about 10 minutes. When finished, participants can enter their email for a chance to win one of five, \$20 Amazon e-gift cards.

Feel free to reach out to either Lindsay Ahmann or Dr. Jessyca Arthur-Cameselle at [arthurj2@wwu.edu](mailto:arthurj2@wwu.edu) or (360)-650-2125 with any questions. Thank you for your time!

Again, here is the link to the survey:

[https://www.az1.qualtrics.com/jfe/form/SV\\_b1PnaqpcpWTtaXY](https://www.az1.qualtrics.com/jfe/form/SV_b1PnaqpcpWTtaXY)

Best,

Lindsay Ahmann ([ahmannl@wwu.edu](mailto:ahmannl@wwu.edu))

## Appendix I

### Social Media Text

Were you an athlete during high school and did you graduate from high school between 2020 and 2022? If so, you want the chance to be entered into a raffle to win one of five, \$20 Amazon e-gift cards by taking an 8-10 minute online survey? If your answers are “yes” and you are 18 years or older, read this message!

My name is Lindsay Ahmann and I am a current graduate student at Western Washington University and former athlete. I am running a study on the thoughts and feelings of former high school athletes who have stopped playing their main sport from high school. Taking the surveys is voluntary and your name or email will not be linked to your answers. Once you have answered all the questions, you will have the choice to enter your email into a separate survey to be entered into the Amazon e-gift card raffle.

If you have any questions or concerns, please feel free to reach out to me at [ahmannl@wwu.edu](mailto:ahmannl@wwu.edu) or email Dr. Jessyca Arthur-Cameselle at [arthurj2@wwu.edu](mailto:arthurj2@wwu.edu).

Here is the link to the study: [https://www.az1.qualtrics.com/jfe/form/SV\\_b1PnaqpcpWTtaXY](https://www.az1.qualtrics.com/jfe/form/SV_b1PnaqpcpWTtaXY)



## Appendix J

### Inclusion Criteria

1. Are you 18 years old or older?
  - a. Yes. (Participant will proceed to the next question)
  - b. No. (Participant will be sent to a page informing them that they are not eligible for the study and thanking them for their time)
2. Did you play on an organized sports team representing your high school during your junior and/or senior year?
  - a. Yes. (Participant will proceed to question #4)
  - b. No. (Participant will proceed to question #3)
3. Did you play on an organized sports team hosted outside of your school, during your junior and/or senior year of high school (i.e., a club sports team or “travel team”)?
  - a. Yes. (Participant will proceed to question #4).
  - b. No. (If no to both question #2 and #3, participant will be sent to a page informing them that they are not eligible for the study and thanking them for their time).
4. Now, we would like to know about your “primary sport,” which is the sport you played at the highest level during your high school years. Did you or do you continue to play your primary sport after high school (i.e., college, professional, collegiate club team, recreational league, etc.)? Please select the option that best describes you below.
  - a. Yes, I still play and compete in my primary sport at a collegiate varsity or professional level. (Participant will be sent to a page informing them that they are not eligible for the study and thanking them for their time)

- b. Yes, I still play and compete in my primary sport but at a lower level (i.e., club sports team, intramural team, recreational league, etc.). (Participant will be sent to a page informing them that they are not eligible for the study and thanking them for their time)
  - c. No, I no longer compete in my primary sport at any level. (Participant will proceed to question #5)
- 5. Was your final competition in your primary sport (the sport that you played at the highest level during high school) within the last 36 months (i.e., last 3 years) from today?
  - a. Yes, it was within the last 3 years/36 months. (Participant will proceed to the first survey)
  - b. No, it was longer than 3 years/36 months ago. (Participant will be sent to a page informing them that they are not eligible for the study and thanking them for their time)

## Appendix K

### Informed Consent Form

#### Introduction

My name is Lindsay Ahmann, and I am a graduate student in the Sport and Exercise Psychology program at Western Washington University (WWU).

I am running a research study to better understand the thoughts and experiences of former high school athletes who no longer play their main sport. The name of this research study is “Mental Experiences of Former High School Athletes”. I am seeking your consent to participate in this study.

Please read this document to learn more about this study and determine if you would like to participate. Taking the surveys is completely voluntary, and I will address your questions or concerns at any point before the study.

#### Eligibility

You may be part of this study if you meet all of the following:

- You are 18 years old or older.
- You played on a sports team in high school but *no longer* play in your main sport at any level.
- You graduated high school and/or stopped playing in your main sport within the last 36 months (2020, 2021, or 2022 high school graduates).

I hope to include 300 people in this research.

#### Activities

If you decide to be part of this study, you will be asked to do the following activities:

1. You will take several numeric surveys through the online survey website, Qualtrics, which will take approximately 10 minutes of your time.

During these activities, you will be asked questions about:

- Your current thoughts, feelings, and well-being. Two examples of questions from the numeric surveys are “I felt hopeful about the future” and “I was bothered by things that usually don’t bother me”.
- Your background information such as your age, gender, race, sport you participated in during high school, and reason you stopped playing your sport.

These activities are optional, and you may stop this study at any time.

## **Risks**

Some possible risks/discomforts include: mental discomfort when answering some survey questions. To decrease the impact of these risks, you can stop taking the surveys at any time.

## **Benefits**

If you complete the surveys, there are no direct benefits to you, other than the possible incentive described below. This research may increase the general knowledge in the subject area of this study.

## **Privacy and Data Protection**

I will take reasonable measures to protect the security of all your personal information and I will not ask you for your name or high school's name, but I cannot guarantee privacy of your answers. In addition to me, the following people and offices will have access to your answers:

- The WWU Institutional Review Board
- My thesis research committee members

I will securely store and deidentify your answers on a password protected computer for 3 years.

## **How the Results Will be Used**

I will publish the results in my thesis with the potential to be published in an academic journal. Participants will not be identified in the results.

## **Incentive**

If you complete all of the surveys, you will have the option of entering your email address in a separate survey to be included in a raffle for one of five, \$20 Amazon e-gift cards. Your email address will only be used to notify you if you won the raffle, and your email address will not be connected to your answers entered on the other surveys. Your email will be deleted once winners of the raffle have been sent their e-gift cards.

## **Contact Information**

If you have questions, you can email me at [ahmannl@wwu.edu](mailto:ahmannl@wwu.edu). My Faculty Advisor's name is Dr. Jessyca Arthur-Cameselle and she is a professor at Western Washington University. You can

contact her at [arthurj2@wwu.edu](mailto:arthurj2@wwu.edu) or (360)-650-2125. If you have questions about your rights in the research or if a problem or injury has happened during your participation, please contact the WWU Institutional Review Board at [compliance@wwu.edu](mailto:compliance@wwu.edu) or 360-650-3220.

## **Voluntary Participation**

If you decide not to participate, or if you stop the surveys after you start, you will not lose any benefit to which you are otherwise entitled.

**\*\* By clicking *next*, you are agreeing to participate in the following study\*\***