

COLLEGE STUDENT ATHLETES AND PSYCHOLOGICAL  
WELL-BEING IN RETIREMENT

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The purpose of this study was to investigate college student athletes' psychological health and well-being in the months immediately following graduation/retirement, which has been indicated as a critical time period. Participants consisted of collegiate athletes ( $N = 166$ ; women = 138, men = 28;  $M_{\text{age}} = 21.84$  years,  $SD = 0.86$ ) who were surveyed at the end of their competitive seasons when they were graduating and retiring from their sports (Time 1) and 3 to 4 months later (Time 2). Athletes completed measures of readiness to graduate/retire, depression, body satisfaction, and satisfaction with life at Time 1; they completed the measures of psychological well-being at Time 2. Bivariate correlations revealed six dimensions of retirement readiness related to outcomes at Time 2: seeing self as more than an athlete, maintaining social support, neglecting other areas of life, achieving sport goals, utilizing sport career services and developing a new focus after retirement. Through a series of hierarchical regression analyses, one of reach psychological well-being outcome, I entered the Time 1 measure and gender in Step 1 and then the correlated dimensions for that outcome at Step 2. For body satisfaction,  $F(5, 160) = 27.281, p < .000, \text{adj. } R^2 = .443$ , only Time 1 Body Satisfaction was a significant predictor ( $\beta = .639$ ). For depressive symptoms,  $F(5, 160) = 17.110, p < .000, \text{adj. } R^2 = .328$ , Time 1 depression ( $\beta = .462$ ) predicted higher levels whereas developing a new focus upon ending career their sport career predicted less depression at Time 2 ( $\beta = -.161$ ). Finally, for satisfaction with life,  $F(7, 158) = 18.336, p < .000, \text{adj. } R^2 = .424$ , being male ( $\beta = -.165$ ), being more satisfied with one's life at Time 1 ( $\beta = .436$ ), maintaining social support networks ( $\beta = .199$ ), and having a new focus upon ending sport careers ( $\beta = .140$ ) predicted more life satisfaction at Time 2. Although no dimensions were significantly related to higher body satisfaction, a new focus after retirement

and social support were essential in understanding the athletes' satisfaction with life and depressive symptoms three to four months post retirement. Future research may continue to apply longitudinal methods to follow the retirement process up to six months to a year, explore gender, race, and NCAA Division differences, identify what is incorporated in an athlete's new focus or examine other dimensions of body image that may better represent it during retirement. Universities may look to implement career assistance programs focusing on these psychosocial factors to prepare athletes for their retirement experiences.

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## CHAPTER 1

### INTRODUCTION

The sport careers of college student-athletes end for a variety of reasons, including voluntary retirement upon graduation from school, changes in levels of motivation and ambition, loss of playing time/status, academic challenges or ineligibility, sport injury, and/or acknowledgment of an inability to perform at the physical, technical, tactical, or mental level that is necessary (Stokowski et al., 2019). Even though collegiate athletes know that their sport careers will be relatively short, 98% retire upon graduation (NCAA, 2018), they still must invest themselves fully in their current athlete roles, which can lead to a solidification of, and foreclosure on, their identities as athletes (Cosh, LeCouteur, Crabb, Kettler, 2013). Due to the heightened athletic identity, a general lack of career planning, and minimal social reconstruction (e.g., understanding of oneself in a new context outside of sport) that often exist when athletes are in college (Miron, 2010; Park, Lavalley, & Tod, 2013; Sturm, Feltz, & Gilson, 2011; Tyrance, Harris, & Post, 2013), retirement, and the transition out of sport into a non-sport life, can present career, psychosocial, physical, and financial challenges regardless of sport discipline, gender, and/or race.

Emerging from existing athletic retirement models (Schlossberg, 1981; Stambulova, 1994; 1997; 2003; 2011; Taylor & Ogilvie, 1994) are two central ideas. First, retirement represents a transition for athletes. Schlossberg (1981) defined a transition as “an event or non-event, which results in a change in assumptions about oneself and the world, thus requiring a corresponding change in one’s behavior and relationships” (p. 5). From this perspective, retirement may be viewed as a process during which athletes’ thoughts, feelings, and behaviors vary over time. That is, the process of retirement begins months prior to when athletes actually

end their careers and transition out of sport and unfolds for years into their futures (Brown et al., 2018; Cavallerio et al., 2017; Jewett et al., 2019; Little, 2020; Stambulova & Wylleman, 2014). For example, through qualitative interviews with 12 former Division I student-athletes (Age:  $M = 23.9$ ,  $SD = 1.83$ ; 58% female; 91.7% identified as White; competing in soccer, wrestling, swimming & diving, golf, track & field, cross country, softball, men's basketball) that occurred within five years of retirement, Warehime et al. (2017) found that the athletes enjoyed having more time to focus on themselves and less stress in their lives; most also described improving and/or maintaining a positive view of themselves since college. Conversely, retired male Division I basketball and football players ( $N = 15$ ) reported being unsure of their identities after retirement, specifically citing feeling a "loss of self" (p. 24), difficulty finding structure in their lives, and an "overwhelming feeling of depression and anxiety" (p. 21; Menke et al., 2019). More recently, Barcza-Renner et al. (2020) interviewed 15 (Female athletes,  $n = 12$ ) college athletes from multiple sports (e.g., golf, track & field, volleyball) about their transition from Division I athletics three to four months after they had retired. Although most athletes had planned for their sport retirement, they found that during their transition their lives lacked structure and purpose at times and they were unsure of their emerging identities. These studies illustrate how the retirement process unfolds, often over years, and how athletes' experiences during the transition are not uniform and can be both positive and negative.

Whereas researchers have continued to examine athletes' reactions to sport retirement, most studies have been conducted retrospectively (e.g., Holding et al., 2020; Menke & Germany, 2019), have focused on well-being and experiences years after retirement (e.g., Shander & Petrie, under review; Smith & Hardin, 2018), and/or have not obtained baseline measures of the outcomes of interest prior to (or at) retirement (e.g., Cummins & O'Boyle, 2015; Kerr &



Dacyshyn, 2000; Lavalley & Robinson, 2007). For example, Demetriou et al. (2020) utilized a narrative case study approach to examine the experiences of an Australian Rules Football player who has been retired for five years at the time of the interviews. Although a longitudinal quantitative exploration of elite athletes' well-being following retirement, Holding et al.'s (2018) baseline measure was taken 1.5 years after the athletes had retired with the intention of predicting their well-being six months to two years later. Therefore, there exists a need to evaluate athletes' responses to transitioning out of sport using quantitative, longitudinal methods that obtain baseline measures of the outcomes at retirement so as to ascertain change over time, particularly during the months immediately following this event.

The second main point that emerges from existing models of athlete retirement concerns the idea that there are multiple factors, ranging from internal coping skills, to environmental assistance (e.g., career counseling), to social support, to athletic identity, that influence how athletes appraise their retirement and thus determine the quality of their experiences with this transition. For example, drawing on existing conceptual models of retirement (e.g., Stambulova, 2003, 2010; Taylor & Ogilvie, 1994,) and research on retired athletes' experiences (e.g., Keuttel et al., 2017; Stephan & Demulier, 2008;), Lavalley and Wylleman (1999) identified 12 key psychosocial and developmental factors that may influence the quality of athletes retirement from sport. The factors included: perception of control over the cause of retirement (Lavalley, Grove, & Gordon, 1997), athletic identity (Grove, Lavalley & Gordon, 1997); social support (Webb, Nasco, Riley, & Headrick, 1998); previous transition experience (Swain, 1991); continued involvement in sport-related activities (Curtis & Ennis, 1988); occupational planning (Grove et al., 1997); identity foreclosure (Murphy, Petitpas, & Brewer, 1996); socioeconomic status (Kleiber, Greendorfer, Blindc, & Sandall, 1987); transferable skills (Sinclair & Orick,

1993); achievement of sport-related goals (Sinclair & Orlick, 1993); receipt of career transition support services (Gorely, Lavalley, Bruce, Teale, & Lavalley, 2001); and a new life focus after retirement (Baillie & Danish, 1992). Subsequent research has continued to support the saliency of these factors in relation to how successfully, and healthfully, athletes make the transition from sport (Fuller, 2014; Gairdener, 2019; Gorely, Lavalley, Bruce, Teale, & Lavalley, 2001; Grove, Lavalley & Gordon, 1997; Lavalley, Grove, & Gordon, 1997; Menke & Germany, 2019; Papathomas, Petrie, & Plateau, 2017; Park et al., 2013; Reifsteck et al., 2018; Wylleman & Lavalley, 1999).

Studies have examined these aforementioned psychosocial dimensions (i.e. BALANCE scale) related to the impact on overall psychological well-being, eating disordered behaviors, and anxiety or depressive symptoms to name a few. One study conducted by Shander & Petrie (under review) with 217 Division 1 female collegiate swimmers and gymnasts ( $M_{\text{age}} = 26.5$  years,  $SD = 2.32$ ) who had been retired 2-6 years (87.6% White, and 76.6% had retired because they had completed collegiate eligibility) examined the relationships between retired female athletes' perceptions of the psychosocial dimensions associated with a positive transition from sport and psychological well-being. Seven of the psychosocial and developmental dimensions assessed through the BALANCE scale (e.g., prior experiences with life transitions, new focus outside of sport) were related to two or more of the psychological well-being outcomes (i.e., depressive symptoms, satisfaction with life and body satisfaction). Shander and Petrie (under review) found that athletes who believed that they had achieved their sport goals and had a new focus outside of the sport domain upon retirement reported the highest levels of psychological well-being. The retired athletes who had been engaged in areas of life outside of sport and who managed to stay involved in sport-related activities in retirement (e.g., physical fitness, different sports,

coaching), respectively, exhibited fewer depressive symptoms and more satisfaction with their current bodies. In another study, Cummins & O'Boyle (2015), among 5 retired NCAA Division 1 Male basketball players who retroactively reported on their transition experience, lack of career transition resources/ institutional support, pre-transition planning and lack of social support contributed to more difficulty in retirement (i.e. confusion, discomfort, loss) while high athlete identity and distance from other interests during collegiate years contributed to "feelings of uncertainty" and feeling "out of place" ( p. 10 ). These findings in just these two studies suggest that there are multiple BALANCE factors that impact athlete psychosocial well-being and provide depth to the temporality of the psychosocial dimension related to athletes' psychological functioning immediately post retirement.

Additionally, Keuttel et al. (2017) conducted a study with 629 European elite athletes (Swiss, Polish, Danish) competing in 25 different sports (e.g., handball, swimming, track & field, soccer, cross country) who had been retired between 1 and 8 years and focused on differences between countries. Several statistically significant factors emerged within each of the groups, mainly positive perception of career end, less focus on athlete identity, voluntary decision to retire, and having concrete plans for future indicated more positive transition experiences (i.e. less emotional/social/health/vocational difficulties). Additionally, research continues to reveal the many variables associated with transition. More specifically, in a systematic review conducted by Park et al. (2013) on 126 studies evaluated from 1968 until 2010, they focused on retirement experiences of elite athletes and the major factors highlighted by the research. The majority of studies (N=86) reported that participants expressed career transition difficulties or negative emotions, including feelings of loss, identity crisis and distress, when they ended their career and adjusted to post-athlete life. Fifteen variables associated with the quality of athletes'

transition emerged: career transitions, including athletic identity, demographical issues, voluntariness of retirement decision, injuries/health problems, career/personal development, sport career achievement, educational status, financial status, self-perception, control of life, disengagement/drop-out, time passed after retirement, relationship with coach, life changes and balance of life. Results concluded that pre-retirement planning coincided with feelings of comfort, lower athletic identity was related to higher use of coping strategies, balance of life while competing contributed to easier transitions, to name a few. A clear understanding of the various factors and their relationship to psychosocial outcomes in elite athletes during the early part of their retirement process can lead to more meaningful support for retiring athletes.

To summarize, individual, situational, and environmental factors interplay and affect the quality of transition. The transition out of elite sport is a complex and multifaceted phenomenon that is impacted by insurmountable factors like athlete identity, coping resources/social support. Their effects on satisfaction with life, and overall well-being among other outcomes have been common themes within research and continue to be relevant factors to understand at time of retirement and during the critical period of transition for elite student-athletes.

Research on college student-athletes' transition out of sport, and how psychosocial, environmental, and development factors may contribute to their well-being in retirement have been few in general, but particularly so in relation to longitudinal, quantitative studies that focus on their well-being during the initial months post-retirement (e.g., DiPalma, 2016; Miller & Kerr, 2002; Papathomas, Petrie, & Plateau, 2018; Stephens, 2019). Thus, the purpose of this study was to improve upon past retirement research with collegiate athletes by (a) obtaining measures of the psychosocial/developmental factors just prior to graduation/retirement so as to eliminate the need for retrospective reporting, (b) including key psychological outcomes to represent the

quality of their transition, (c) using a longitudinal methodology, and (d) examining the quality of their transition within the first four months of retirement/graduation. Specifically, I examined how the 12 psychosocial dimensions identified within the BALANCE scale, such as developing a new life focus outside of sport, planning for a career outside of sport, or using career-transition/planning services, influenced graduating college student-athletes' psychological well-being, as represented through their body satisfaction, satisfaction with life, and depressive symptomatology, three to four months post-retirement. My first research question what is the bivariate relationships of the 12 psychosocial dimensions and each of the well-being outcomes at Time 2 (i.e., 3-4 months after retirement)? My second research question was what is the multivariate predictive relationship of the 12 psychosocial dimensions and each psychological well-being outcomes at Time 2, after controlling for gender and Time 1 well-being?

## CHAPTER 2

### METHOD

#### Participants

Participants were 166 retiring collegiate SAs (women = 138, men = 28;  $M_{\text{age}} = 21.84$  years,  $SD = 0.86$ ) drawn from NCAA athletic departments from across the U.S. To be eligible, SAs had to be completing their athletic eligibility and graduating at the end of the spring term, 2020; no athletes continued in their sport after graduation. The athletes were drawn from NCAA Division I ( $n = 101$ ; 60.8%), DII ( $n = 27$ , 16.3%), DIII ( $n = 38$ , 22.9%) institutions, and represented 26 different sports (e.g., fencing, swimming, ice hockey, gymnastics). In terms of race/ethnicity, 134 (80.7%) identified as White, 11 (6.6%) identified as Black, 15 (9.0%) identified as Latinx, while 6 (3.6%) preferred to self-identify or identify as other. Regarding their relationship status, 90 (54.2%) were single and not in a romantic relationship, 75 (45.2%) were single but in a romantic relationship, 1 (0.6%) was married. Current BMI was  $23.84 \text{ kg/m}^2$  ( $SD = 3.975$ ).

#### Measures

##### Demographics

Participants provided information regarding their age, gender identity, race/ethnicity, sport, NCAA Division, relationship status, and height and weight (which were used to calculate BMI).

##### Psychosocial, Environmental, and Developmental Factors in Athletes' Adjustment to Sport Retirement

The 12-item British Athletes Lifestyle Assessment Needs in Career and Education Scale (BALANCE; Lavalley & Wylleman, 1999) assesses the extent to which athletes experienced

different psychosocial and developmental events when active competitors. The items/factors included: perception of control over the cause for retirement, athletic identity, social support, previous experience with transitions, continued involvement in sport related activities following retirement from competition, degree of occupational planning, identity foreclosure, socioeconomic status, transferable skills, achievement of sport-related goals, provision of career transition support services, and having a new focus after retirement. For each factor (which is represented by a single item), athletes indicated their level of agreement from 1 (*strongly disagree*) to 7 (*strongly agree*). Similar to Shander and Petrie (under review), I used each item as an independent predictor of the SAs' psychological well-being in retirement; a higher score indicated a healthier, more positive experience on that factor. Data concerning the scale's validity has been provided (Lavalley & Wylleman, 1999; Lavalley, Golby & Lavalley, 2002), as higher BALANCE total scores have been found to indicate less satisfaction with life, higher levels of depression and more difficulties with adjustment (Lavalley, 2005).

### Depressive Symptomatology

The two-item Patient Health Questionnaire-2 (PHQ-2; Kroenke et al., 2003), which is a shortened version of the PHQ-9 (Kroenke et al., 2001), provides an assessment of depressive symptoms. Concerning how they had been feeling over the prior two weeks, athletes rated each item (e.g., "Feeling down, depressed, or hopeless") from 0 (*not at all*) to 3 (*nearly every day*). Total score is the sum of the two items; higher scores indicate more depressive symptomatology. Cronbach's alpha in the current sample was .85. The measure has demonstrated strong psychometric properties and validity, including specificity values that range between .83 and .90 (Manea et al., 2016; Jenkins et al., 2020).

## Life Satisfaction

The 5-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) assesses individuals' overall satisfaction with their lives. Participants rated their level of agreement on items such as "I am satisfied with my life," from 1 (*strongly disagree*) to 7 (*strongly agree*). Total score is the sum of the items and can range from 0, *no satisfaction*, to 35, *maximum satisfaction*. Cronbach's alpha from the current sample was .83. Extensive data concerning the scale's validity has been provided (e.g., Diener et al., 1985; Pavot & Diener, 2008), with the higher satisfaction with life scores being related to positive affect ( $r=.047$ ) and optimism ( $r=.048$ ) within co-ed samples of college students and adults.

## Body Satisfaction

Five items drawn from the Body Parts Satisfaction Scale-Revised (BPSS-R; Petrie, Tripp, & Harvey, 2002) and Body Parts Satisfaction Scale for Men (BPSS-M; McFarland & Petrie, 2012) were used to assess the athletes' satisfaction with their bodies. For each item, such as "satisfaction with overall body size and shape," athletes responded from 1 (*extremely dissatisfied*) to 6 (*extremely satisfied*). Total score is the sum of the items; higher scores indicate more satisfaction. Cronbach's alpha in the current sample was .81. The validity of these items has been established in both collegiate athletes and nonathlete samples, such as lower body satisfaction being related to more negative affect (i.e., fear, hostility, guilt, sadness) and higher levels of bulimic symptomatology (Chatterton, Petrie, Shuler & Ruggero, 2017; McFarland & Petrie, 2012; Petrie, Tripp, & Harvey, 2002).

## Procedures

The data from this study was obtained from a larger study that was approved by the university's institutional review board approved. Upon approval, the research team sent the link



to the Qualtrics survey to student-athletes through the NCAA Student Athlete Advisory Council (SAAC) as well as through 80 different collegiate athletic departments. Athletic department staff at each university (e.g., sport psychologist, athletic trainers) sent the student-athletes messages about the study via email and/or the messaging systems used within their athletic departments (e.g., Teamworks). Messages included the purpose of the larger study (i.e., an examination of student athletes' psychological well-being during COVID-19) and the survey link; Time 1 data collection occurred mid-April to mid-May 2020. Athletes provided consent and contact information (e.g., name, email, phone number), and then voluntarily completed the study's measures, which included those used in this study; survey completion took approximately 15 minutes. At the end, they were given the opportunity to enter themselves into a random drawing to win one of four \$200 Amazon e-gift cards.

Time 2 data collection occurred during mid-August to mid-September, 2020. All Time 1 student-athletes who had provided names and contact information were sent emails and texts inviting them to participate at Time 2. Each student athlete was sent, within the email or text, a unique code# that they entered into the survey; the code# allowed Time 1 and Time 2 data to be matched accurately. Athletes were sent up to eight reminders to click on the survey link and participate in the study. Time 1 student-athletes who indicated that they were graduating at the end of their spring term, 2020, provided data at Time 2, and indicated that they were not participating in their sport anymore at the collegiate level (at Time 2) were included in my study.

Table 1

*Data Collection and Questionnaires*

Data Collection	Time before/after retirement	Questionnaires
Time 1 - Baseline	2-4 weeks prior to retirement & graduation	Demographic information; PHQ-2; BALANCE; SWL; Body Satisfaction
Time 2	3-4 months after graduation	PHQ-2; SWL; Body Satisfaction

## Data Analysis

Data passed screening for normality and had minimal missing data (< 9%) across the participants, which were drawn from the larger, longitudinal study of collegiate student athletes psychological well-being during COVID-19. I conducted analyses in SPSS using the supermatrix dataset (Lang & Little, 2014), which was the aggregate of the 100 multiple imputed datasets informed by principle component analysis composites (Howard et al., 2015) calculated with PcAux. With my data, I computed total scores and then examined the distributional properties (i.e., skewness, kurtosis, outliers); all fell within normal ranges. For all analyses, I set alpha at .01 to control the Familywise Error Rate.

For Research Question 1, I correlated the BALANCE items, with the athletes' Time 2 outcomes (i.e., depressive symptomatology, body satisfaction, and satisfaction with life). For Research Question 2, I ran a separate hierarchical regression model for each outcome; in each model the Time 2 outcome served as the criterion variable. In Step 1 of the first regression, I entered the Time 1 outcome and the athletes' self-reported gender (man or woman); I entered gender to control for its potential influence on the psychological well-being outcomes. Then for Step 2, I entered the individual BALANCE items that were correlated significantly ( $p < .01$ ) with that outcome. I repeated this regression model for each outcome – depressive symptomatology, body satisfaction, and satisfaction with life.

## CHAPTER 3

### RESULTS

#### Completers versus NonCompleters

From the larger set of student athletes who indicated at Time 1 they were graduating ( $N = 569$ ), 237 participated at Time 2 and provided data. Of these, 166 qualified for this study, having met all three inclusion criteria (graduated, were no longer participating in collegiate sport, and provided data at Time 1 and Time 2).

Given the attrition, I compared the Completers ( $N = 237$ ) to the NonCompleters ( $N = 332$ ) on demographics (i.e., age, gender, and race) and on the three outcomes (depression, body satisfaction, and satisfaction with life). The gender ratio between NonCompleters (women = 68.2%; men = 31.8%) and Completers (women = 80.9%; men = 19.1%) was significantly different,  $\chi^2(1, N = 569) = 11.355, p = .001$ . With regards to the NonCompleters' and Completers' racial/ethnic status ( $\chi^2(3, N = 569) = 1.007, p = .800$ ) and age ( $\chi^2(9, N = 569) = 18.178, p = .033$ ), there were no significant differences.

For the psychological outcomes at Time 1, the NonCompleters and Completers differed significantly on their body satisfaction,  $F(1, 568) = 6.801, p = .009$ , and depressive symptomatology,  $F(1, 568) = 110.873, p < .000$ , but not on their satisfaction with life,  $F(1, 568) = 4.930, p < .027$ . NonCompleters, compared to the Completers, expressed higher levels of dissatisfaction with their bodies ( $M = 3.777; SD = .852$  vs.  $M = 3.558, SD = 1.150$ ) and more depressive symptoms ( $M = 2.778; SD = 1.806$  vs.  $M = 1.272, SD = 1.483$ ).

#### Research Question 1: Correlational Analyses

Pearson product-moment correlations for the 12 psychosocial dimensions measured through the 12-items of the BALANCE scale, and each of the Time 2 psychological outcome,

are presented in Table 2. Across the 12 dimensions, six were related significantly to one or more of the outcomes. As expected, higher levels of each dimension were associated with more psychological well-being across the outcomes.

Table 2

*Means, Standard Deviations, and Pearson Correlations for the BALANCE Scale Items and Life Satisfaction, Body Satisfaction and Depressive Symptomatology*

Variable	BS-2	PHQ-2	SWL	<i>M</i>	<i>SD</i>
BAL1	-.036	.036	.094	3.53	2.376
BAL2	.144	-.119	.261**	4.41	1.926
BAL3	.291**	-.292**	.337**	5.31	1.719
BAL4	.030	-.013	-.001	4.76	1.592
BAL5	.137	.168*	.164*	4.71	1.849
BAL6	.130	-.060	.171	5.77	1.765
BAL7	.226**	-.241**	.150	3.86	1.966
BAL8	-.006	-.153*	.153*	3.28	1.556
BAL9	.077	-.148	.083	6.32	1.015
BAL10	.193*	-.121	.316**	3.28	1.874
BAL11	.129	-.198*	.237**	2.87	2.004
BAL12	.206**	-.299**	.378**	4.64	1.588
<i>M</i>	3.475	1.392	24.506		
<i>SD</i>	1.160	1.525	5.835		

*Note.* *N* = 166. BAL1 = “I personally decided to end my sport career;” BAL2 = “At the time I ended my sporting career, I saw myself only as an athlete (recoded);” BAL3 = “I lost my social support network when I ended my sporting career (recoded);” BAL4 = “I have had previous experience with transitions in other areas of my life;” BAL5 = “I have continued my involvement in sport-related activities since my career termination;” BAL6 = “I planned for a career outside of sport prior to my career termination;” BAL7 = “During my sporting career, I neglected other areas of my life in order to concentrate on my sport (recoded);” BAL8 = “My socioeconomic status improved following my career termination;” BAL9 = “I have been able to transfer skills I learned in sport to other areas of my life;” BAL10 = “I achieved all of my sporting goals during my career;” BAL 11 = “I utilised the services of a sports career transition programme prior to my retirement;” BAL12 = “I was able to develop a new focus upon ending my sporting career”. Each BALANCE item ranges from 1 to 7; higher score indicates more positive adjustment. BS-2 = Body satisfaction scale-2 (scores range from 1, *extremely dissatisfied*, to 6, *extremely satisfied*). PHQ-2 = Depressive symptomatology scale (scores range from 0, *no symptoms at all*, to 6, *high level of symptoms*; SWL = Satisfaction with life scale (scores range from 5, *s-low satisfaction*, to 35, *high satisfaction*). \* *p* < .05 \*\**p* < .005.

## Research Question 2: Regression Analyses

### Body Satisfaction

In this analysis, I included the three individual dimensions from the BALANCE Scale that had been significantly correlated with Time 2 Body Satisfaction at the  $p < .01$  level. Step 1, which included gender and Time 1 Body Satisfaction, was significant,  $F(2, 163) = 66.645, p < .000, Adj. R^2 = .443$ . At Step 2, the inclusion of BALANCE items 3, 7, and 12 was not significant, explaining only an additional 1% of the variance,  $F(3, 160) = 1.021, p = .385$ . In the full model,  $F(5, 160) = 27.281, p < .001, Adj. R^2 = .443$ , only Time 1 Body Satisfaction was a significant predictor ( $\beta = .639$ ). See Table 3.

### Depressive Symptomatology

In this analysis, I included the three individual dimensions from the BALANCE Scale that had been significantly correlated with Time 2 depressive symptoms at the  $p < .01$  level. Step 1 of the model, which included gender and Time 1 depressive symptoms, was significant,  $F(2, 163) = 36.178, p < .001, Adj. R^2 = .299$ . The inclusion of BALANCE items 3, 7, and 12 was not significant in Step 2 and only explained an additional 4.1% of the variance,  $F(3, 160) = 3.354, p = .020$ . In the full model,  $F(5, 160) = 17.110, p < .000, Adj. R^2 = .328$ , Time 1 depression ( $\beta = .462$ ) predicted higher levels at Time 2; however, developing a new focus upon ending career their sport career predicted less depression at Time 2 ( $\beta = -.161$ ). See Table 3.

### Satisfaction with Life

In this analysis, I included the five individual dimensions from the BALANCE Scale that had been significantly correlated with Time 2 satisfaction with life. Step 1 of the model, which included Time 1 SWL and gender, again was significant,  $F(2, 163) = 44.516, p < .000, Adj. R^2 = .345$ . The inclusion of the BALANCE items 2, 3, 10, 11, and 12 at Step 2 was significant,  $F(5,$

158) = 5.439,  $p < .001$ , and explained an additional 9.5% of the variance. In the full model,  $F(7, 158) = 18.336, p < .00, Adj. R^2 = .424$ , being male ( $\beta = -.165$ ), being more satisfied with one's life at Time 1 ( $\beta = .436$ ), maintaining their social support networks ( $\beta = .199$ ), and having a new focus upon ending their sport career ( $\beta = .140$ ) predicted more life satisfaction at Time 2. See Table 3.

Table 3

*Multiple Regression Analyses Predicting Body Part Satisfaction, Satisfaction with Life, and Depressive Symptomatology*

Step/Predictor	Adjusted $R^2$	$\Delta R^2$	$\Delta F$	$B$	$SE B$	$\beta$
BS-2						
Step 1	.443	.450	66.645**			
BS-2 Time1				.643	.057	.658**
Gender				.280	.180	.091
Step 2	.443	.010	1.021			
BS-2 Time1				.625	.065	.639**
Gender				.258	.155	.124*
BAL3				.062	.042	.092
BAL7				.015	.037	.026
BAL12				-.033	.046	-.045
PHQ-2						
Step 1	.299	.307	36.178**			
PHQ-2Time1				.527	.054	.555**
Gender				-.129	.221	-.033
Step 2	.328	.041	3.354			
PHQ-2Time1				.427	.066	.462**
Gender				-.036	.263	-.009
BAL3				-.085	.062	-.096
BAL7				-.052	.053	-.067
BAL12				-.154	.064	-.161*
SWL						
Step 1	.345	.353	44.516**			
SWL Time1				.541	.058	.587**

(table continues)

Step/Predictor	Adjusted $R^2$	$\Delta R^2$	$\Delta F$	$B$	$SE B$	$\beta$
Gender				-2.268	.981	-.146*
Step 2	.424	.095	5.439**			
SWL Time1				.402	.064	.436**
Gender				-2.563	.940	-.165**
BAL2				.168	.204	.055
BAL3				.674	.225	.199**
BAL10				.396	.205	.127
BAL11				.066	.193	.023
BAL12				.514	.247	.140*

Note:  $N = 166$ . BAL2 = “At the time I ended my sporting career, I saw myself only as an athlete (recoded);” BAL3 = “I lost my social support network when I ended my sporting career (recoded);” BAL4 = “I have had previous experience with transitions in other areas of my life;” BAL5 = “I have continued my involvement in sport-related activities since my career termination;” BAL6 = “I planned for a career outside of sport prior to my career termination;” BAL7 = “During my sporting career, I neglected other areas of my life in order to concentrate on my sport (recoded);” BAL9 = “I have been able to transfer skills I learned in sport to other areas of my life;” BAL10 = “I achieved all of my sporting goals during my career;” BAL 11= “ I utilized the services of a sports career transition program prior to my retirement”; BAL12 = “I was able to develop a new focus upon ending my sporting career”. Each BALANCE item ranges from 1 to 7; higher score indicates more positive adjustment. BP-2 = Body satisfaction scale-2 (scores range from 1, *extremely dissatisfied*, to 6, *extremely satisfied*). PHQ-2 = Depressive symptomatology scale (scores range from 0, *no symptoms at all*, to 6, *high level of symptoms*; SWL = Satisfaction with life scale (scores range from 5, *s-low satisfaction*, to 35, *high satisfaction*). \* $p < .01$ ; \*\*  $p < .001$ .

## CHAPTER 4

### DISCUSSION

As hypothesized, the psychosocial dimensions measured just prior to graduation/retirement, were related to the student-athletes' psychological well-being three to four months later. At the univariate level, seeing self as more than an athlete, feeling a sense of social support, not having neglected other areas of life to concentrate on sport, having achieved all sport goals, having used career assistance programs at their universities, and having a new life focus after retirement, predicted more satisfaction with body and life and fewer depressive symptoms. However, when gender and Time 1 psychological well-being were controlled, there was one key dimension that continued to predict the athletes' satisfaction with life and depressive symptomatology at Time 2. At the time of their graduation/retirement, the more the student-athletes believed that they had developed a new focus in their lives, the more satisfied they were with their lives and the fewer depressive symptoms they were experiencing three to four months later.

Regarding the student-athletes' Time 2 body satisfaction, only how they felt about their bodies at the time of their graduation/retirement was a significant predictor. As expected, and consistent with past research with retired collegiate athletes (e.g., Levine & Smolak, 2020; Voelker et al., 2019), the student-athletes' body satisfaction remained relatively constant over time; Time 1 satisfaction explained about 44% of the variance in their satisfaction at Time 2. Contrary to my hypotheses, and past research (e.g., Russell et al., 2017; Shander & Petrie, under review), no psychosocial dimension was related to Time 2 body satisfaction in the regression analysis. Although retired athletes, particularly female, have reported experiencing distress and dissatisfaction with their bodies, particularly due to physical changes such as weight gain and



loss of muscle tone (e.g., Barrett & Petrie, 2020; Stephan, 2003; Stirling & Kerr, 2012), this finding generally has been documented within samples of athletes who have been retired for at least two to six years. My study, which assessed body satisfaction after only 3-4 months post retirement, may simply have represented too short a timeframe in which real bodily changes may have occurred and subsequently for dissatisfaction to have developed. As a result, the Time 1 satisfaction was the best (and only) predictor; the salience of the psychosocial dimensions may only come into play after longer periods of time when athletes have experience substantive bodily changes that may be distressing and less explained by how they felt about their bodies at the end of their college careers. Future research may consider other dimensions of body image, such as appreciation, appearance orientation, or satisfaction within the sport environment, to better understand how their perceptions of, and experiences with, their bodies may change immediately following graduation/retirement and to determine if the psychosocial dimensions might predict these body-related outcomes.

Although athletes' level of depressive symptoms and satisfaction with their lives at Time 1 did predict 30% to 35% of the respective variance in these measures at Time 2, the extent to which the athletes believed that they had developed a new focus in their lives upon ending their sport career also was a significant predictor. Consistent with past research that examined athletes between 1 and 7 years after their retirement (1.5- 2 years after retirement, Alfermann et al., 2004; 5-7 years, Cosh et al., 2015; Lavalley & Tod, 2013; 2-6 years, Shander & Petrie, under review;), when athletes had such a focus, they were less depressed and more satisfied with their lives three to four months after their graduation/retirement. Although I did not assess what this focus might be, research with female athletes has suggested that it may include developing new hobbies, beginning a new career, starting graduate school, getting married, etc. (e.g., Lally, 2007;

Lavallee et al., 2007; Stambulova et al., 2007). From a practical perspective, finding a direction and focus in life post retirement can help simply because it can fill the many hours athletes otherwise had been spending in their sports during the last four years of college. But such a focus might also help athletes shift, or expand, their identities, helping them move from one defined solely by their sport involvement. Future research might interview athletes to better understand how this focus manifests and the effects it might have on other developmental dimensions, such as expanding identities and developing new support networks.

Consistent with past research (e.g., Adams et al., 2015; Brown et al., 2018; Cecic Erpic et al., 2004; Park et al., 2013; Park & Lavallee, 2015; Willard & Lavallee, 2016), being able to maintain social support after graduation/retirement was also a significant predictor, specifically for how satisfied the athletes were with their lives three to four months later. For example, in interviews with eight former elite athletes (male,  $N = 4$ ; aged between 29-46 years,  $M = 36.75$ ,  $SD = 6.18$ ) who had been retired 2-12 years ( $M = 6.75$  years,  $SD = 3.99$ ), Brown et al. (2018) found that the athlete's belief that people were "simply there for them" (p. 4) instilled them with a strong sense of support. In particular, the athletes identified family (e.g., parents and/or a partner/ spouse) and peers from their sport as contributing to their experience of support as positive. This support help to trust and be open with others, such as sharing how they were feeling without worry that they would be judged. Further, Stambulova et al., (2009) concluded that athletes' ability to cope successfully with retirement was mostly dependent on the social resources (e.g., friends, family) available to them. Social support appears to help athletes adjust to a life after sport by providing them with a safe space, as created by their supportive others, to share and make meaning from their new life experiences and, if needed, grieve the loss of their athlete identities. As social support often is provided through romantic relationships, researchers

might consider relationship status as a predictor and examine how it relates to the extent to which the graduating athletes believe they have developed new support systems. Also, qualitative studies would allow for a more nuanced examination of the how support systems change as athletes transition from their college sport environment into ones that may be completely separate from sport and their prior schools.

My study's longitudinal design, and use of valid measures of psychological well-being, represented a substantive improvement over past studies (e.g., Albion & Fogarty, 2005; Brewer, Raalte, & Linder, 1993; Kerr & Dacyshyn, 2000; Stephan & Demulier, 2008). Despite these strengths, there were limitations that warrant discussion. First, although my sample was adequate in terms of power, I did have attrition from Time 1 to Time 2. Completers and NonCompleters were similar in terms of age and race/ethnicity, yet they did differ in gender and level of depression. My sample was less depressed and thus my findings may underestimate the potential relationship of the psychosocial dimensions to this outcome. Second, although I did examine student-athletes' psychological well-being over time (in relation to their perceptions of retirement readiness), I only assessed them at three to four months post-graduation. Thus, I cannot comment on whether the dimensions would have continued to predict their well-being into the future. Additional research is needed to actively follow student-athletes, perhaps every three to six months, over the first two years of retirement, to address this limitation. Finally, although I used established, validated measures, all were self-report, which can create bias in responding. Further, these measures provided solely objective/quantitative data, which cannot represent the breadth and depth of the athletes' lived experiences during their transition from sport. In future longitudinal studies, researchers might incorporate mixed-methods designs

where subsets of athletes also may be interviewed at different timepoints so their experiences may be more fully explored.

Given that certain aspects of athletes' readiness to retire, as represented through the 12 psychosocial dimensions within the BALANCE scale, predicted their satisfaction with life and experiences with depression, there are implications for the governing body (i.e., NCAA) and university athletic departments as to developing and implementing policies to assist student athletes in their transition from sport. For example, college athletic departments could be mandated to adopt clear retirement programming for the numerous student-athletes retiring from sport yearly, focusing on (within those programs) the psychosocial dimensions that appear to be clearly related to better well-being post-retirement. Currently, a few programs (e.g., NCAA, "Moving On", Reifsteck & Brooks, 2018) focus on expanding physical activity as a non-athlete and athlete roles in retirement in three to four meeting segments to enhance lifetime physical activity. However, this program is not being implemented in all university athletic departments, nor does it completely address factors associated with more positive retirement experiences. Programming should focus on assisting athletes identify new focuses post retirement while also concentrating on how to continue or construct new support systems for athletes that will follow them into retirement. Programming should also consider a unified approach across NCAA Divisions and sports to support student-athletes transitioning out of collegiate sport each and every year.

In this study I examined how collegiate athletes' readiness to retire, as measured just prior to their graduation/retirement, would be related to their psychological well-being 3-4 months later. I found that their level of readiness to retire was related to their psychological well-being in retirement. Specifically, retired athletes who saw themselves as more than an athlete,

having social support upon retirement, did not reject other areas of their life, achieved their sport goals, utilized their career transition programs within the university and having a new focus upon retirement, yet having a new focus and maintaining support were particularly salient, remained significant predictors even after controlling for Time 1 well-being measures. When athletes had developed a new focus, they were more satisfied with their lives and reported fewer depressive symptoms; social support also contributed to greater life satisfaction. My findings suggest that sport professionals, including sport psychologists, who work with student athletes, can take active measures to assist athletes in readying themselves for retirement in terms of the psychosocial dimensions represented in the BALANCE scale. For example, prior to retirement and throughout collegiate athletic experiences, sport professionals can help athletes learn new coping strategies (Willard & Lavalley, 2016), nurture identities and interests outside of sport (Holding et al., 2020), and develop or maintain support networks with family and friends (Brown et al., 2018). More research, in particular longitudinal mixed-methods, is needed to better understand the longer-term influences of the psychosocial dimensions and to explore the various they may interact with each other as athletes have new life experiences post-retirement. For example, having a new life focus (e.g., starting a career) might lead to a new social support network, and both may contribute to expanding their identity. Qualitative interviews would allow for exploration of the breadth and depth of the athletes lived experiences as their transition out of sport unfolds.

APPENDIX A  
INFORMED CONSENT AND DEMOGRAPHIC QUESTIONNAIRE

## Informed Consent for Studies with Adults

**TITLE OF RESEARCH STUDY:** Psychological Well-Being and Retirement from Sport: A Mixed-Methods Investigation

**RESEARCH TEAM:** : Trent Petrie, PhD, [trent.petrie@unt.edu](mailto:trent.petrie@unt.edu), Psychology Department, Terrill Hall 368, 1155 Union Circle #311280, Denton, TX; Karolina Wartalowicz, M.S., [karolinawartalowicz@my.unt.edu](mailto:karolinawartalowicz@my.unt.edu); Stephanie Barrett, M.S., [stephaniebarrett@my.unt.edu](mailto:stephaniebarrett@my.unt.edu)

You are being asked to participate in a research study. Taking part in this study is voluntary. The investigators will explain the study to you and will answer any questions you might have. It is your choice whether or not you take part in this study. If you agree to participate and then choose to withdraw from the study, that is your right, and your decision will not be held against you.

You are being asked to take part in a research study about college student athletes' experiences as they graduate and transition out of sport. Specifically, we are interested in better understanding what may contribute to them making a successful transition from sport and how their psychological well-being may vary over time. The information obtained through this study may serve as the foundation for developing intervention programs to help future student athletes with this transition.

This research is being funded by a grant provided by the College of Liberal Arts and Social Sciences at the University of North Texas.

Your participation in this research study involves providing information through one of two methods. First, you may be asked to provide demographic information and then complete a series of quantitative surveys that will be administered at three different time points (the month prior to your graduation, one month following your graduation, and three months following your graduation); each survey will take approximately 15 minutes to complete. Second, you may be asked to undergo a structured interview that would take approximately 60-75 minutes to complete. You will not be asked to participate in both studies. Each method will allow you to provide information on your psychological well-being as it relates to your retirement from collegiate sport. More details on each method will be provided in the next section.

You might want to participate in this study if you are interested in sharing your thoughts, feelings, and experiences about retiring from collegiate athletics and how your sport retirement may be affecting your psychological well-being (e.g., mood, body image). The information you share may provide the foundation for the development of programming that can help future student athletes cope even better with retirement. However, you might not want to participate in this study if you do not have the time to complete either the three 15-minute surveys or one 60-75-minute in-depth interview.

You may choose to participate in this research study if you are an collegiate athlete who has either already retired from their sport, or will be retiring from their sport (and graduating) during Spring Semester 2020.

The reasonable foreseeable risks or discomforts to you if you choose to take part is experiencing negative emotions (e.g., sadness, frustration) while reflecting on your retirement from collegiate sport, which you can compare to the possible benefit of experiencing positive emotions (e.g., happiness, pride) and memories, as well as sharing your experiences, which can be used to inform university athletic departments and the NCAA about how to support retiring student athletes in the future. You will be eligible to receive compensation for participation.

**DETAILED INFORMATION ABOUT THIS RESEARCH STUDY:** The following is more detailed information about this study, in addition to the information listed above.

**PURPOSE OF THE STUDY:** The purpose of our study is twofold. First, we want to examine the mental health and psychological well-being of collegiate student athletes as they retire from their sport, graduate, and transition into their lives after sport. Second, we want to obtain an in-depth understanding of how already retired collegiate athletes have experienced their transition out of sport and how their retirement may be affecting their physical (e.g., relationship with exercise and physical activity) and psychological (e.g., body image) functioning. Your responses in these studies will provide helpful and needed information about how collegiate student-athletes experience, and deal with and function in, sport retirement, which can inform the development of future intervention programs to support student-athletes in their retirement from sport.

**TIME COMMITMENT:** In the first study (i.e., the survey study), soon-to-be retired student-athletes who elect to participate will complete the first (baseline) survey questionnaire approximately 4-6 weeks prior to their anticipated college graduation (which we expect to be in May/June 2020), the second survey (Time 1) approximately one month after graduation, and the third survey (Time 2) approximately three months after their graduation date. Therefore, data collection will occur at three different time points spanning approximately five months. Each data collection will require approximately 15 minutes.

In the second study (i.e., interview), already retired student athletes who participate will be asked to complete a brief demographic questionnaire (approximately ten minutes to complete), prior to the interview, which is expected to last approximately 60-75 minutes. Total participation in this interview portion of the study is expected to last approximately 1 to 1.5 . Based on your eligibility, you will be asked to participate in only one of the studies.

**STUDY PROCEDURES:** As a retired, or soon to be retired athlete, you will be asked to complete either a series of quantitative surveys or an in-depth structured interview. If you participate in the survey portion of this study, you will be provided, via email, a link to the secure website where the surveys will be housed. In addition, you will be given a unique code number that you will enter into the website at each of the three data collection points; the code number will be used to match your responses over time. You will not provide your name or other identifying information when completing these web-based surveys. One week prior to each data collection time point, we will email you directions for accessing the website, as well as your code number, so you may complete the survey; reminder emails will be sent three days and one day prior to the data collection as needed. Questions in the three surveys will assess your



psychological well-being (e.g., depression, anxiety) as well as how your coping with your retirement; you will have the option to skip any question if feel uncomfortable answering it.

If you participate in the structured interview, you will be sent an email directing you to a secure website where you will provide demographic data; you also will receive a unique code number to enter so we may match your demographic information to your responses from the interview. You will not provide any identifying information, such as your name, into the website. Once you have completed the demographic survey, we will contact you via email to schedule a convenient date and time for you to participate in the interview. In the interview, you will be asked a series of predetermined, open-ended questions about your experiences in retirement, including your relationships with food/eating and physical activity, body image, and coping with the transition to sport retirement. In addition to the predetermined set of interview questions, your responses may be restated by the interviewer for clarification, and you may be asked or encouraged to expand upon original responses.

**AUDIO/VIDEO/PHOTOGRAPHY:** Audio recording will be used only for the interview portion of the research study. Please indicate if you agree or do not agree to be audio recorded.

- I agree** to be audio recorded during the research study.
- I agree** that the audio recording can be used in publications or presentations.
- I do not agree** that the audio recording can be used in publications or presentations.
- I do not agree** to be audio recorded during the research study.

If you do not agree to be audio recorded during the research study, you may only be eligible to participate in the survey questionnaires. You may not be eligible to participate in the in-depth interview if you do not agree to be audio recorded.

The recordings will be kept with other electronic data in a secure UNT OneDrive account for the duration of the study.

**POSSIBLE BENEFITS:** Participants may experience benefits from participating in this study, including increased insight and understanding about themselves, their psychological well-being, and how they are coping with their transition out of sport. Participants may also experience positive mood states upon reflecting on their sport experience and sharing that via the surveys or interview. The information from both portions of this study may benefit future collegiate student athletes as programming and other support services may be developed and offered to them.

**POSSIBLE RISKS/DISCOMFORTS:** In sharing your personal experiences, thoughts, and feelings as you retired from your sport, you may experience some psychological discomfort (e.g., sadness, frustration, vulnerability) during the participation in this study. However, possible risks/discomforts are likely equivalent to feelings participants would experience in everyday life that are consistent with life transitions.

If you experience excessive discomfort when completing the research activity, you may choose to stop participating at any time without penalty. The researchers will try to prevent any problem that could happen, but the study may involve risks to the participant, which are currently

unforeseeable. UNT does not provide medical services, or financial assistance for emotional distress or injuries that might happen from participating in this research. If you need to discuss your discomfort further, please contact a mental health provider, or you may contact the researcher who will refer you to appropriate services. If your need is urgent, helpful resources include the National Crisis Hotline at (800) 273-8255. NCAA athletes may also find additional resources here: [http://s3.amazonaws.com/ncaa/files/ssi/mental-health/toolkits/student-athlete/story\\_html5.html](http://s3.amazonaws.com/ncaa/files/ssi/mental-health/toolkits/student-athlete/story_html5.html)

**COMPENSATION:** For each of the three online surveys that you complete, you will be entered into a drawing to win one of 32 \$25 Amazon e-gift cards. For example, if you complete all three surveys (baseline, Time 1, Time 2), you will be entered into three different drawings for a \$25 gift card. If you choose not to complete the online survey at any of the time points, you will not be eligible to participate in that drawing.

Internal Revenue Service (IRS) considers all payments made to research subjects to be taxable income. Your personal information, including your name, address, and social security number may be acquired from you and provided to UNT System Tax Office for the purpose of payment. If your total payments for the year exceed \$600.00, UNT will report this information to the IRS as income and you will receive a Form 1099 at the end of the year. If you receive less than \$600.00 total payments in a year, you are personally responsible for reporting the payments to the IRS.

There are no alternative activities offered for this study.

**CONFIDENTIALITY:** Efforts will be made by the research team to keep your personal information private, including research study, and disclosure will be limited to people who have a need to review this information. All paper and electronic data collected from this study will be stored in a secure location on the UNT campus and/or a secure UNT server for at least three (3) years past the end of this research on a password protected computer in the PI's campus office. Research records will be labeled with a unique code number and the master key linking participant names with code numbers will be maintained in a separate and secure location.

The results of this study may be published and/or presented without naming you as a participant. The data collected about you for this study may be used for future research studies that are not described in this consent form. If that occurs, an IRB would first evaluate the use of any information that is identifiable to you, and confidentiality protection would be maintained. While absolute confidentiality cannot be guaranteed, the research team will make every effort to protect the confidentiality of your records, as described here and to the extent permitted by law. In addition to the research team, the following entities may have access to your records, but only on a need-to-know basis: the U.S. Department of Health and Human Services, the FDA (federal regulating agencies), the reviewing IRB, and sponsors of the study.

**CONTACT INFORMATION FOR QUESTIONS ABOUT THE STUDY:** If you have any questions about the study you may contact Dr. Trent Petrie ([trent.petrie@unt.edu](mailto:trent.petrie@unt.edu)), Karolina Wartalowicz ([karolinawartalowicz@my.unt.edu](mailto:karolinawartalowicz@my.unt.edu)), or Stephanie Barrett ([stephaniebarrett@my.unt.edu](mailto:stephaniebarrett@my.unt.edu)). Any questions you have regarding your rights as a research

subject, or complaints about the research may be directed to the Office of Research Integrity and Compliance at 940-565-4643, or by email at [untirb@unt.edu](mailto:untirb@unt.edu).

**CONSENT:**

- Your signature below indicates that you have read, or have had read to you all of the above.
- You confirm that you have been told the possible benefits, risks, and/or discomforts of the study.
- You understand that you do not have to take part in this study and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits.
- You understand your rights as a research participant and you voluntarily consent to participate in this study; you also understand that the study personnel may choose to stop your participation at any time.
- By signing, you are not waiving any of your legal rights.

Please click the “I agree” button below if you are at least 18 years of age and voluntarily agree to participate in this study.

I agree

Demographic Questionnaire

Please answer the following questions honestly. It is important that you answer every question. There are no “right” or “wrong” answers, so just do the best you can.

Background Information

1. Age: \_\_\_\_\_

2. Gender:

Male

Female

Non-gender binary

Prefer not to disclose

Other (Specify: \_\_\_\_\_)

3. Race/Ethnicity:

Caucasian/White

- Hispanic/Latinx/Mexican American
- African-American/Black
- American Indian
- Asian American/Pacific Islander
- Other (specify: \_\_\_\_\_)

4. What sport did you play as a varsity athlete at your university (please list):

\_\_\_\_\_

5. Once you graduate, what will be your living arrangements:

- Apartment w/no roommate or romantic partner
- Apartment w/ roommate or romantic partner
- House w/no roommate or romantic partner
- House w/roommate or romantic partner
- At home with parents
- Other (specify: \_\_\_\_\_)**

6. Relationship Status

- Single, not in a romantic relationship
- Single, but currently in a romantic relationship
- Married
- Divorced, not in a romantic relationship
- Divorced, but currently in a romantic relationship

7. Please describe what your occupation/career will be upon graduation? For example, if you have accepted a job or been admitted into graduate school, please tell us what you will be doing.

\_\_\_\_\_

8. Please indicate when you are graduating:

- Fall, 2019
- Spring, 2020

9. What was your field of study? \_\_\_\_\_

10. From what college/university are you receiving your undergraduate degree? \_\_\_\_\_

11. In what semester/year did you finish your college athletic career at your school?

\_\_\_\_\_ Fall, 2019

\_\_\_\_\_ Spring, 2020

12. What was the primary reason for you finishing your college athletic career (select only one)?

\_\_\_\_\_ Completed my athletic eligibility

\_\_\_\_\_ Injury (please describe \_\_\_\_\_)

\_\_\_\_\_ Change of coaching staff

\_\_\_\_\_ Loss of athletic scholarship

\_\_\_\_\_ Removed from team by coaching staff (or athletic department)

\_\_\_\_\_ Burned out on sport and did not want to train/compete anymore

\_\_\_\_\_ Other (please explain \_\_\_\_\_)

13. Will you continue in your athletic domain as a :

\_\_\_\_\_ coach

\_\_\_\_\_ master participant

\_\_\_\_\_ both

\_\_\_\_\_ neither

Health Information:

1. Present height: \_\_\_\_\_ feet \_\_\_\_\_ inches

2. Present weight: \_\_\_\_\_ lbs.

APPENDIX B  
DEBRIEF STATEMENT

Thank you for your participation in this study. If, after completing this survey, you are experiencing any distress and would like to speak with someone about your thoughts and feelings, you may consider seeking assistance from the following sources:

1. A mental health professional in the community where you currently reside;
2. The sport psychologist or psychologist/counselor at the college/university where you are a student-athlete;
3. The National Crisis Hotline at (800) 273-8255; or
4. Emergency services at 911.

NCAA athletes may also find additional resources here:

[http://s3.amazonaws.com/ncaa/files/ssi/mental-health/toolkits/student-athlete/story\\_html5.html](http://s3.amazonaws.com/ncaa/files/ssi/mental-health/toolkits/student-athlete/story_html5.html)

APPENDIX C  
EXTENDED LITERATURE REVIEW



Student athletes are a unique population when it comes to their identity as well as their career development. College student athletes spend almost 40 hours a week in their sport, and inevitably it becomes a part of their personhood and identity (NCAA, 2016). Athletes enter college sports knowing that their sport careers will end eventually, even if they are able to compete at international (elite) or professional levels. For example, according to the NCAA (2018), only about 2% of athletes continue to play their sport professionally, which leaves 98% of athletes who will knowingly cease to compete at the end of their collegiate career (NCAA, 2018). College sport careers end for a various reasons, including voluntary retirement, changes in levels of motivation and ambitions, loss of playing time or status, academic challenges or ineligibility, sport injury, and/or acknowledgement of inability to perform at the physical level necessitated (Stokowski, Paule-Koba, & Kaunert, 2019). Yet, even knowing that they will have a relatively short sport career, to compete at the highest levels, athletes must invest themselves fully in their current roles, which can lead to a solidification of, and foreclosure on, their identities as athletes (Cosh, LeCouteur, Crabb, Kettler, 2013). Because of the strength of their athletic identity, general lack of career planning, and minimal social reconstruction (e.g., understanding of oneself in a new context outside of sport) that exists when athletes are in college (Miron, 2010; Park, Lavalley, & Tod, 2013; Sturm, Feltz, & Gilson, 2011; Tyrance, Harris, & Post, 2013), retirement and the transition out of the sporting context can present career, psychosocial, physical, and financial challenges regardless of sport, gender, and race.

As the demands associated with competitive sport have increased and the knowledge that athletes experience psychological distress when active competitors has become clear (Rice et al., 2016), researchers have become interested in understanding the issues and challenges that athletes face as they transition out of sport (Alfermann, Stambulova, & Zemaityte, 2004; Allison

& Meyer, 1988; Baillie, 1993; 1994; Baillie & Danish, 1992; Brown, Webb & Robinson, 2018; Chow, 2001; Cosh, Crab, & Tully. 2015; Cosh et al., 2013; Crook & Robertson, 1991; Dacyshyn, 1998; Douglas & Carless, 2009; Fortunato & Marchant, 1999; Grove, Lavalley, & Gordon, 1997; Grove et al., 1998; Harrison & Lawrence, 2003; Harrison & Lawrence, 2004; Kerr & Dacyshyn, 2000; Kerr, DeFreese, & Marshall, 2014; Kleiber & Brock, 1992; Knights, Sherry, & Ruddock-Hudson, 2016; Pearson & Petitpas, 1990; Lally, 2007; Lally & Kerr, 2008; Lavalley, 2005; Lavalley, Gordon & Grove, 1997; Lavalley, Grove, & Gordon, 1997; Lavalley & Wylleman, 1999; Marthinus, 2007; Martin, Fogarty, & Albion, 2014; Papathomas, Petrie, & Plateau, 2018; Park, Lavalley, & Tod, 2013; Parker, 1994; Plateau, Petrie & Papathomas, 2017; Reifsteck, Gill & Brooks, 2013; Sherry, & Ruddock-Hudson, 2016; Stambulova et al., 2009; Stambulova, Stephan & Japhag, 2007; Stephan, 2003; Stephan et al., 2003; Stephan, Torregrosa & Sanchez, 2007; Stirling, Cruz, & Kerr, 2012; Taylor & Ogilvie, 1994; Torregrosa et al., 2004; Torregrosa et al., 2015; Warriner & Lavalley, 2008; Webb et al., 1998; Wylleman & Lavalley, 2004; Wylleman, Rosier, & De Knop, 2014). In their meta-analysis of the athlete retirement literature, Park, Lavalley and Tod (2012) drew several key conclusions. First, it may take athletes up to 18 months post-retirement before they feel stability in their lives by experiencing fewer difficulties with stress, and managing their new identities. Recent research, however, suggests that the timeframe may be even longer for some athletes, up to six years post-retirement (Wartalowicz & Petrie, under review). Second, the majority of studies in the meta-analysis done by Park and Tod and Lavalley concluded that some of their participants expressed career transition difficulties or negative emotions, including feelings of loss, identity crisis, and distress when they ended their career and adjusted to post-sport life (e.g., Ballie, 1992; Kerr & Dacyshyn, 2000; McKenna & Thomas, 2007), and did not indicate a timeframe for when athletes felt more

stable. Third, the meta analysis by Park, Lavallee, & Tod describe 15 psychosocial or developmental variables, such as voluntariness of retirement decisions, time passed after retirement, athletic identity and career development, that may affect how athletes respond psychologically and behaviorally during retirement. Finally, as research has continued to expand on exploring psychosocial well-being at time of retirement, there continues to be a need for longitudinal research to examine the timeframe immediately prior to and following retirement from sport and college for elite student athletes (Cosh, Crabb, & Tully, 2015).

Student athletes' transition out of sport and lose existing structural supports and have to create new identities; such transitions may be helped or hindered based on the athlete's experiences while an active competitor. Initial research indicates that although student athletes generally are coping well over the longer-term (i.e., 2+ years post retirement), many still struggle with body image concerns, psychological distress, and reconciling issues of eating and exercising (e.g., Papathomas et al., 2018). Positive and healthy transitions out of sport is possible, specifically if athletes are exposed to pre-retirement planning, adaptive coping, and maintain high social support; Taylor & Ogilvie, 1994). Further, retired student athletes' depression and dissatisfaction with their lives may be improved when they have achieved their sport goals and developed a new life focus (Wartalowicz, & Petrie, 2018). Further, those retiring athletes with high athletic identities who have expanded their identity as an athlete in addition to a friend, daughter, baker, etc., and those who perceive control of their retirement as their own, are more likely to experience less-distressing experiences during the retirement process. Other factors can affect the transition process as well, such as causes of retirement, socioeconomic impact, individual characteristics, and developmental experiences throughout their athletic careers. It seems that those athletes who establish themselves outside of athletics, through their identity,

social networks, or alternative hobbies and careers, are able to cope more effectively, and may be more equipped to combat mental health concerns such as depression, feelings of emptiness and loss, and eating and body image concerns. Additionally, injury, competitive failure, ageing, retirement from sport and other psychosocial stressors, precipitate depression in athletes and could impact the quality of transition of the athletes. Although not all athletes experience transition as a problematic time (Coakley, 1983; Greendorfer & Blinde, 1985), understanding which athletes, which sports, why the difficulties for athletes may occur and when they emerge is highly valuable, as well as crucial to intervene at an early point in time. Although we know about potential athlete difficulties (i.e. body dissatisfaction, lower levels of satisfaction with life, identity foreclosure, etc.) more research is needed to understand the process of the transition for elite athletes across sports.

Although career timeline in sport varies by sport, termination of an athletic career is a crucial event for many athletes at the collegiate level. Retirement from elite sport can mean a whole shift and restructuring of an athlete's life, which can be highly distressing (Petitpas, 2009; Wippert & Wippert, 2008). What we know about the athlete career experiences comes from retrospective accounts of athletes' retirement experiences and varying designs, yet consistently depicts varying difficulties and factors impacting the trajectory of athlete transitions. There is a need for researchers to track athletes as they embark on the retirement process, and throughout the transition itself. As research continues to expand on what contributes to retirement, understanding how retirement/transition is viewed and conceptualized, it is necessary to understand the athletes' process.

#### Meaning and Conceptualization of Retirement/Transition

Some athletes may view leaving sport as a loss or death, particularly when they have

been in the sport environment for years or when athletes retire involuntarily from sport, and even more will experience psychological, physical, and behavioral distress, such as, depression, identity confusion and decrease in life satisfaction (Martin, Fogarty, & Albion, 2014), anxiety about future career decisions (Lavallee & Robinson, 2007), as well as body dissatisfaction and eating disorder symptomatology (Stephan & Bilard, 2003; Papatomas, Petrie, & Plateau, 2018). In terms of psychological responses, researchers have found that retiring athletes are vulnerable to experiencing depression, anxiety, eating disorders and engage in substance abuse (Brown, Webb & Robinson, 2018; Cosh et al., 2013; Crook & Robertson, 1991; Grove, Lavallee, & Gordon, 1997; Grove et al., 1998; Harrison & Lawrence, 2004; Kerr & Dacyshyn, 2000; Lally, 2007; Lally & Kerr, 2008; Lavallee, 2005; Martin, Fogarty, & Albion, 2014; Papatomas, Petrie, & Plateau, 2018; Park, Lavallee, & Tod, 2013; Plateau, Petrie & Papatomas, 2018; Reifsteck, Gill & Brooks, 2013; Sherry, & Ruddock-Hudson, 2016; Stambulova et al., 2009; Stambulova, Stephan & Japhag, 2007; Stephan, Torregrosa & Sanchez, 2007; Stirling, Cruz, & Kerr, 2012; Torregrosa et al., 2004; Torregrosa et al., 2015). For example, in their study of 85 elite Slovenian athletes (ages 21-44 years) who had been retired for fewer than four years, Cecic Erpic, Wylleman, and Zupancic (2004) found that these retired athletes had experienced psychological difficulties concerning identity crises, loss of self-worth, decrease of self-esteem, decline of life satisfaction, lack of self control, low self respect, unaccomplished athletic goals, and alcohol and drug abuse. Such concerns were viewed as particularly distressing when the athletes believed the reason for their retirement was out of their control (e.g., injury or team being cut from the department). In addition to abovementioned physical changes and difficulties, retirement can be associated with numerous family/social difficulties (Cecic Erpic et al., 2004), and social and cultural loneliness (Botterill, 1988) contributing to lower life satisfaction (Martin et al., 2014).

Second, athletes also experience distress regarding the physical, or bodily, changes that are associated with disengagement from elite sport (Stephan & Bilard, 2003). For example, some athletes endure physical challenges in retirement, including injuries and health (e.g. decrease in strength, coordination and physical composition; Papathomas, Petrie, Plateau, 2018; Plateau, Petrie, & Papathomas, 2017a; Plateau, Petrie, & Papathomas, 2017b; Svoboda & Vanek, 1982; Werthner & Orlick, 1986), deconditioning and detraining (e.g., attempting to exercise at same level; Papathomas et al., 2018; Plateau et al., 2017a, 2017b ;Wylleman et al., 1993), and nutrition and diet (e.g. maladaptive eating behaviors; Papathomas et al., 2018; Plateau et al., 2017a, 2017b; Wylleman, de Knop, Verdet, & Cecic-Erpic, 2007). These challenges, which serve as clear indicators as to how the athletes' physical status has devolved, can leave athletes feeling less physically competent and attractive, and with lower levels of self-worth (Stephan, Bilard, Ninot, & Delignieres, 2003; Stirling, Cruz, & Kerr, 2012). The scope of physical changes among retired male and female athletes is vast as weight pressures, aesthetic demands and sport/food relationships vary considerably by sport. For example, although all athletes may struggle to accept the changes in their body's stature, athletes from certain sports (e.g., aesthetic, weight dependent) may endorse particular challenges around learning to eat healthfully and intuitively and developing new relationships with exercise and fitness (Papathomas, Petrie, Plateau, 2018; Plateau, Petrie, & Papathomas, 2017a; Plateau, Petrie, & Papathomas, 2017b; Stirling, Cruz, & Kerr, 2012).

Finally, retirement from athletes can change routines and behaviors of athletes, specifically exercise (Taylor, Ogilvie, & Lavallee, 2005). Some athletes may continue their involvement in their sport by coaching or continuing to perform, while others do not. Others may decide to remain in school around the athletic support systems (Volpe, 2011). For athletes who

may experience involuntary retirement, a major challenge is to adjust daily activities and interactions with teammates and others who were associated with sport-related activities. How athletes may adjust their behaviors and change how they interact with peers and others should continue to be examined to identify risk of poorer transitions. Modifying such changes and personal relationships within daily routines has been recently studied with regard to exercise routines. In a study on 218 former athletes in Division I athletics by Papatomas, Petrie & Plateau (2018) they determined that athletes may find themselves changing their exercise routines, and starting to construct a new identity beyond the sport. Some athletes may continue their physically active lifestyle by pursuing a sport like CrossFit, to continue to uphold the athletic physique. While all athletes endure changes in exercise routines due to retirement, not all retirements lead to athlete dissatisfaction. Thus, more exploration needs to be done to understand individual, developmental and sport specific-distress of an athlete's changing physical appearance, as it can be a large source of difficulties for some athletes in retirement (Phoenix et al., 2005).

Ambiguity has been the main characteristic of transition, but usually followed by some improvement in psychological well-being (Kerr & Dacyshyn, 2000). The length of time of this distress however has been inconsistent in the transition literature. One longitudinal study by Stephan et al., (2003) studied the subjective well-being of 16 Olympic athletes who had retired following the Sydney Olympic Games during the first year of their transition. Researchers determined that athletes found that the athletes generally demonstrated a decline in subjective well-being, specifically experiencing a new type of "professional" identity as being difficult to manage. The athletes reported to manage the decreased well-being, they attempted to invest in new activities to counter feelings of inactivity. However, within about 5 to 6 months following

retirement, retired athletes reported well-being had increased and felt a sense of accomplishment in new roles and career. This study depicted that the transition experience of retirement from sport may not be linear and could be more fluid than previously believed. Conversely in an examination of the retirement distress of 36 Olympic athletes, Stephan (2003) identified that athletes experience an initial decrease in well-being during transition from sport, an increase five months later, stabilization after eight months, and then an increase one year after retirement. However, others have suggested that factors related to a career in competitive athletics may influence psychological function late in the athlete's life. This conclusion suggests that psychological distress may manifest late in retirement, and may not be particularly a linear path, as described by many researchers (Mannes et al., 2019; Lally, 2007). Questions remain about what lengthens the transition difficulties, and when do difficulties emerge in the retiring athletes.

As the transformation of athletes during retirement from athletics may negatively affect how they perceive themselves, their quality of life, their physical stature, and the behaviors in which they choose to engage, understanding what impacts the varied and expansive experiences across gender, sport, and competitive level is key to understanding retirement (Giannone, 2016; Kentta, Mellalieu, Roberts, 2016; Martin, Fogarty, Albion, 2014; Roppeau, 2015). Specifically, researchers have become interested in understanding the psychological and environmental factors that affect how athletes' appraise and cope with their retirement, and ultimately influence how and when they might respond across this inevitable life transition. To provide structure and direction in understanding the process of athletes' retirement, researchers have proposed multiple models to categorize and characterize how athletes' respond to retirement and explain their experiences as they transition out of sport (Schlossberg, 1981; Stambulova, 1994; 1997; 2003; Taylor & Ogilvie, 1994). Initial models of athlete retirement (e.g., Coakley, 1983; Rosenberg,



1981), borrowed from existing theories, such as Kubler-Ross (1969), and conceptualized retirement like dying where athletes would experience, and progress through similar stages. Although these stages of feelings could depict some of the experiences the retiring athletes experienced, as a model, it was unable to explain the sporting career termination due to the non-sport specific nature, as well as solely focusing on retirement as a negative event (Wylleman et al., 1999). Thus, researchers have moved to conceptualized sport retirement as a process and have identified multiple psychosocial and development factors that are hypothesized to influence how athletes experience their transition out of sport.

### Models

Researchers have developed different conceptual models to better understand, and explain, what athletes experience as they transition out of sport. Initial models were metaphorical, such as when researchers conceptualized the end of athletes' careers as a process of dying (Wylleman, Alfermann, & Lavalley, 2004). From thanatology, "social death" was used to illuminate what many athletes experience in relation to their career termination from sport (i.e. pain, anguish, loss, disappointment, etc.; Kalish, 1966; Lavalley, 2000). Lavalley (2000) referred to social death as the condition of being "treated as if one were dead, although still physiologically and intellectually alive" (p. 7). This definition highlights the loss of social status and functioning retiring athletes may experience as well as the isolation and ostracism they may endure from losing their social support and network of identification. This "death" represents a non-normative transition that is involuntary and unpredicted (Schlossberg, 1984), resulting in the loss of personhood and other existential experiences such as "who am I" that can challenge ones sense of self.

Expanding on the conception of retirement as death, Schlossberg (1981) defined a

transition as “an event or non-event, which results in a change in assumptions about oneself and the world, thus requiring a corresponding change in one’s behavior and relationships” (p. 5); this idea offers a more dynamic perspective of the retirement process that better captures athletes’ experiences. Schlossberg (1981) also identified three interrelated factors that need to be considered to understand the transition and athletes’ experiences of it. These factors included (a) the athletes’ perception of the transition (e.g., role change, affect, occurrence of stress, voluntariness of the retirement); (b) the characteristics of the athletes who is experiencing the transition (e.g., psychosocial competence, gender, age, previous experience with a transition of a similar nature); and (c) the features of the pre and post transition environments (e.g., internal support systems). To illustrate Schlossberg’s perspective, consider a point guard on a basketball team who has a strong relationship/connection with her primary coach and teammates due to her position on the team and the leadership role she has undertaken. If the athlete ends her career with an unforeseen injury, she may lose her roles on the team and support she generally received from teammates and coaches. Thus, she may struggle with the transition out of sport due to changes in her roles and the support she receives. Such changes can be emotionally painful and confusing to the retiring athlete, and can contribute to engaging in less than healthy behaviors (e.g., isolation, potential substance abuse, crisis, depression).

Expanding on Schlossberg’s (1981) model, Taylor and Ogilvie (1994) presented a domain specific model that added components of the individual and the reason for transition. Specifically, their model included: (a) causal factors that initiate the change process (e.g., age, injury, end of contract/eligibility, decision to settle down with family), (b) developmental factors related to transition adaptation (e.g., history with transitions, overall outlook on transitions), (c) coping resources that affect the responses to career transitions (e.g., social support, peer support,

purpose/outlet outside of athletic career), (d) quality of adjustment to career transition (e.g., decreases in life satisfaction, increases in depressive symptoms or eating disorder symptomatology), and (e) possible treatment issues for distressful reactions to career transition (e.g., eating disorder symptomatology, anxiety symptoms, depressive symptoms, etc.). In particular, Taylor and Ogilvie highlighted that athletes who lacked adequate support/coping would be expected to endure career transition distress. For example, a lacrosse athlete who becomes engaged and chooses to settle down with her spouse instead of continuing her sporting career, does not have experience with transitions, has a limited identity outside of being a lacrosse player and is generally anxious may endure a more difficult transition than her teammate who, although forced to retire due to injury, has interests outside of sport (e.g., in art), has a supportive family with whom she has a strong relationship, and who has dealt with many transitions in the past and thus has developed effective coping skills. Thus, understanding athletes' responses to sport retirement is multiply determined and requires consideration of psychosocial and developmental factors in the athletes' lives.

Based on empirical studies of Russian athletes, Stambulova (1994, 1997, 2003) conceptualized career transition as a process of coping with the specific demands/challenges that result from retirement. Transitional challenges, such as a shifting athletic identity or identifying new roles in society, represent the discrepancy between “what the athlete is”(Stambulova, 1994) and “what he/she wants or ought to be” (p. 103, Stambulova, 2011). She found that athletes' ability to cope with such demands and challenges resulted in a successful transition or a crisis transition. Effectiveness of coping depended on a dynamic balance between resources (internal and external) available during the transition and the demands, challenges, and barriers that exist. The model's inclusion of awareness of the barriers athletes may encounter, such as a lack of

necessary knowledge or skills, interpersonal conflicts, difficulties in combining sport and studies or work, represented a unique addition to understanding transition. Some athletes could activate internal resources or characteristics (e.g., the athlete's self-knowledge of skills, personality traits, motivation) and external resources (e.g. availability of social and/or financial support) that may help them cope more effectively. Successful transitions mainly occurred if athletes were able to recruit/use or rapidly develop necessary resources/coping skills (e.g., mental skills, planning) or rely on social support networks to receive needed assistance. For example, when injured athletes become aware that their sport careers may be over as a result of the injury, those who are able to reach out for support, such as talking to their coach or fellow teammates, may be able to cope more effectively with the reality of their situation. However, when athletes are unable to cope effectively on their own, and do not seek assistance either due to not being fully aware they need it or not accepting the fact that they are struggling, the quality of their transition may be negatively affected. When struggling athletes do not seek (and receive) help, they may endure negative (often long-term) consequences, or "costs" (e.g., injuries, overtraining, neuroses, psycho-somatic illnesses, alcohol/drug use, Stambulova, 1994, 2000).

As transition models view retirement as a process, they are able to account for the nature of career transition in sport (Lavalley, 2000). First, Schlossberg (1981, 1984) highlights the three major factors interacting during a transition, which include the individual characteristics of the athlete in the transition, perception of the transition and characteristics of the environment pre and post-transition. Although these components interact with the environment and the individual, and highlight the importance of internal support systems and institutional supports for the athletes, however have not been empirically studied among voluntarily retired athletes and are not as multidimensional as athletics requires. Second, Taylor & Ogilvie's (1993;1994;2001)

model with casual, developmental factors and quality of adjustment increased the breadth of understanding of what previous experiences athletes have with adjustment, vital to understanding the fluctuating athletic domain. Research using Taylor and Ogilvie's (1994; 2001) model has identified that considering these factors along with "readiness" can be useful in developing specific interventions to aid athletes in their transition out of sport (Knights et al., 2016). Third, Stambulova's (2003) conceptual model of retirement added a consideration: "effectiveness of coping depends on a dynamic balance between transition resources and barriers" (p. 28, Kuettel, Boyle, & Schmidt, 2017). The resources athletes may mobilize include internal (e.g., the athlete's self-knowledge of skills, personality traits, motivation) and external factors (e.g. availability of social and/or financial support), which facilitate the coping process, and impact critical phases in the athletic, psychological, psychosocial, academic/vocational, and financial level of an athlete's career (Wylleman & Lavallee, 2004; Wylleman, De Knop, & Reints, 2011). Although these periods come with specific demands athletes have to cope with to successfully continue their career or effectively adapt to retirement (Stambulova, 2003), longitudinal research using these models to study the critical periods has not been done. As these models suggest, empirically studying individual factors of athletes can be useful in conceptualizing individual transition processes, can provide information on how to predict how athletes can cope with the transition and focuses of possible interventions.

#### Internal/External Factors

Based on these models of retirement (Schlossberg, 1981; Stambulova, 1994; 1997; 2003; Taylor & Ogilvie, 1994), researchers have examined the internal/external factors that have been suggested to facilitate the transition and/or factors that may work as barriers for efficacious adaptation to regular after athletics (e.g., athletic identity, transferable skills, coping resources;

Brewer, Van Raalte, & Petitpas, 2000; Cecic Erpic, 2001; Grove, Lavalley, & Gordon, 1997; Lavalley et al., 2000; Petitpas, Cornelius, & Brewer, 2001). In addition to those factors, Lavalley and his colleagues (Lavalley, Grove, & Gordon, 1997; Grove, Lavalley, & Gordon, 1997; Grove, Lavalley, & Gordon, 1998) recognized that other factors, as suggested by transition models (e.g., Gordon, 1995; Parker, 1994; Sinclair & Orlick, 1994; Stambulova, 1994; Taylor & Ogilvie, 1994), were likely at play as well and influential in how athletes' responded to their retirement. Through a series of qualitative studies, they identified 12 key areas that were contributing to the transition process, some of which had been identified and studied previously. For example, Lavalley, Grove, & Gordon (1997) interviewed 48 former athletes from various sports to determine which athletes had more difficulty adjusting in retirement. They established that the reason for retirement, athlete identity, planning for retirement, support from friends/family, during emotional adjustment, and meaning making, among many others, could likely affect the process of transition. In the sections that follow, I provide overview of the psychosocial and developmental factors that have been examined in relation to how athletes' respond during their transition out of sport.

## Coping

Often the types of coping resources athletes use influence the overall quality of adjustment to retirement from sport, and other domains in life. For example, Lavalley, Gordon, & Gordon (1997) examined how athletes can cope with difficult reactions to retirement from athletics. The researchers focused on 15 former elite athletes from a follow-up study of the original 48 retired athletes, who had been identified as having experienced severe emotional difficulties in response to their retirement from sport. Researchers determined by utilizing micronarratives, that the extent to which the athletes were able to make meaning out of their

retirement moderated the distress they experienced during the transition process; the ability to make meaning appeared to help them cope more successfully with their retirement from sport. How much the meaning-making mediated the process, how meaning-making was achieved, or what exactly improved the feeling of loss is still unclear.

As coping resources and meaning-making has been suggested to improve the transition process, others studies have depicted that having a new focus after retirement predicts better adjustment (Baillie, 1993; Sinclair & Orlick, 1993; Werthner & Orlick, 1986. Many studies have not focused on athletes developing a new focus, however in a study by Lif & Lindmark (2012) with 10 Swedish former female athletes between one and five years, having a new focus outside of sport was the biggest resource for the group of retiring athletes. Athletes who had a new focus such as education, social networks or other clear goals appeared to have more resources to be prepared for their life outside of athletics (i.e. social support, coping skills and retirement planning) (Stambulova et al., 2009; Stambulova, 2012). Although most of these athletes in the Lif & Lindmark (2012) study voluntarily retired from sport, the factor remains positively related to less difficult transition experiences for athletes.

Researchers also have found that high performing athletes may turn to alcohol as a way of coping with their transition out of sport (Mihovilovic, 1968; Wippert & Wippert, 2008). In a study done by Wippert & Wippert (2008), with 40 retiring German ski athletes who were observed over 8 months, athletes who had a more difficult transition process scored higher on measures of alcohol use and increased alcohol consumption. More specifically Wippert and Wippert (2008) determined that those athletes with less supportive coaches and negative event appraisal of the transition process were more likely to use alcohol. Although alcohol use can be Overall, however, athletes high in coping resources (e.g. social support, self-esteem, confidence)

tend to experience less stress than those possessing few coping skills when attempting to manage the termination process, because they themselves contain the intellectual and emotional resources to manage this new aspect or understanding of their lives (Pearson & Petitpas, 1990).

## Support

Retired athletes are searching for psychosocial support as they retire (Stephan et al., 2003). For example, Wylleman et al. (2007) found that the transition out of sport can be associated with deficiencies in athletes' social contacts and problems in building new relationships outside of sports. This difficulty with making social contact or connection outside of sport suggests athletes may not know where to seek relationships outside of their regular sporting context, leading to more confusion or difficulties when removed from the sporting domain. In a study on 250 former professional athletes, Kane (1991) found that the athletes reported having difficulties in non-sporting situations (e.g., relationship difficulties and divorce, difficulties fitting into the workplace with peers, isolation among social support group due to varying life phases), which delayed identity shifts to nonathlete areas (e.g. career, relationships). Thus, athletes may be unsure of how to continue personal relationships without their sport, and initiate a connection based on more than just commonality of sport or athlete status. Maintaining sport relationships can be valuable to athletes, but may be difficult to do. In a study with female gymnasts, Lally and Kerr (2008) highlighted that career termination has a significant and strenuous impact on athletes' relationships with parents and friends in and outside of sport. More specifically, difficulties with parents centered on their worry about their athlete-daughters' emotional (e.g., sadness) and physical (e.g., chronic pain) reactions to retirement.

Currently, the NCAA or other elite domains do not have a streamlined process to assist Division I athletes in their transitions. Most career assistance programs are primarily managed by



national sport governing bodies (NGB), Olympic Committees, sport federations, universities or independent organizations associated with sport (Gordon & Lavalley, 2012). Athletes lose the camaraderie of teammates and the automatic team support upon retirement. Thus, acquiring social support or maintaining support from teammates is essential to help the athlete during this transition period. In a qualitative study done by Stirling, Cruz & Kerr (2012), elite retiring gymnasts reported that a lack of support from teammates and gymnastics organization contributed to their difficult transition and substantial weight-control behaviors. This perceived lack of support resulted in feelings of isolation, with which the athletes were unable to cope effectively. Furthermore, in a study done by Richardson (2009) on nine female water polo players from five Northern California Universities who had exhausted eligibility for college athletics and were navigating the retirement process, the athletes reported that social support was very helpful to the moving on process. Specifically, athletes reported fearing the loss of important relationships within the sport, and support from family, friends and teammates, as well as indicated that having someone to listen to them and be compassionate helped them feel more grounded throughout their transition process.

## Identity

Learning to navigate changes in athletic identity is a common experience for athletes, particularly when they are transitioning out of sport (Gordon & Lavalley, 2011; Lavalley & Robinson, 2007; Stambulova, Alfermann, Statler, & Cote, 2009; Webb, Nasco, Riley, & Headrick, 1998). Athletic identity, or the degree to which individuals define themselves through the athlete role (Brewer et al., 1993), can influence how athletes approach their training and how they are in competitions (Lally, 2007; Warriner & Lavalley, 2008). Athletes who are strongly identified with that role may be more devoted and dedicated to being involved in sport and

exercise, developed of athletic skills, grounded in their sense of self, and confident. However, that same strong identification can be an impediment during transitions, such as when seriously injured or retiring from sport (Pearson & Petitpas, 1990). A strong athletic identity is thought to be a risk factor for emotional difficulties following the ending of an athletic career because “individuals who strongly commit themselves to the role may be less likely to explore other career, education and lifestyle options due to their investment in sport” (Brewer et al., 1993, p. 241). Being too strongly identified with the athlete role can result in not seeing oneself as anything other than an athlete, which can be highly stressful when that role cannot be fulfilled (e.g., when injured, in retirement). Brewer et al. (1993) further highlighted that athletes with strong athletic identities are more likely to construe an event in terms of its consequences for that individual’s athletic functioning than a person only weakly identified to their role as an athlete. Therefore, the degree to which individuals categorize themselves within the athlete role can have significant influence on the quality of adjustment. The stronger the identification or attribution to athletic identity of the individual, the greater the challenge in finding new meaning of life, and/or adapting to new roles (Brewer et al., 1993).

A high/strong/exclusive athletic identity typically indicates professional/social/emotional difficulties in retirement and corresponds to a longer duration in the adaptation to post-athletic career life (Alfermann et al., 2004; Brewer et al., 1993; Cecic Erpic et al., 2004; Grove et al., 1997). Athletes can feel as though they may be changing from ‘hero to zero,’ as they transition out of sport; such loss of athletic identity may lead them to withdraw emotionally and become behaviorally disengaged from their former team and sport support systems (Orlick, 2008). For example, if an athlete can no longer identify as a collegiate basketball players because her four years of competition eligibility has concluded, she may no longer “hang out” with teammates

and withdraw from other supports (e.g., academic advisors, assistant coaches) because she thinks doing so may reduce her feelings of loss and sadness. Other athletes, however, may try to cling to sport involvement and/or identity for a long period of time after their physical capabilities have waned (Gordon & Lavalley, 2012), or even after they have retired from sport participation. These athletes may continue to be involved with their former team, continue to strive to train or compete at a similar level in a different context, or continue to identify solely as an athlete, all of which may interfere with and delay them building an identity beyond that of athlete and making supportive connections among nonsport individuals.

By taking the time to identify other interests while continuing to participate in the sport, the athlete could experience identity confusion however, between sport involvement and an additional identity formation process (Warriner & Lavalley, 2008). This is one of the main reasons why identifying other identities while continuing in elite sport is not often possible to nurture or made available to athletes (Cosh et al., 2013), as coaches want the focus during elite athletics to be on performance and not on preparing for the future outside of the athlete domain. Although this may be a difficult conversation to have and focus on while continuing to participate competitively in their sport, it could be essential to long term higher overall psychosocial well-being of the athlete.

When athletes forego their identity outside their sport environment, they may have a limited idea of who they are when finishing their sporting career (Park, Lavalley & Tod, 2012). This “identity foreclosure” has been negatively associated with the quality of career transitions and can interfere with the attainment of a true and accurate self-identity (Marcia, 1980). Compared to less identified athletes, those with a strong athletic identity who end their sport involvement are more likely to have some difficulties as they progress into the work force.

Because they have not focused on what exists outside of their sport, these highly identified individuals may experience a lack of career choice or less suitable career choices, or inadequate training to pursue new careers or avenues. For example, Albion and Fogarty (2005) found that elite athletes with high levels of athletic identity were less well-informed about occupations or available vocations, had significantly more conflicts about career choices, and were more tentative about their subsequent career compared to those athletes who exhibited lower levels of athlete identity. Such a lack of career development may have negative long-term financial implications for these athletes (Wylleman et al., 1993).

#### Reason for Retirement

Researchers have commonly found that athletes report fewer difficulties adapting to retirement (e.g., psychological, career) when they perceive their transition of sport as being voluntary (Alfermann, 2000; Alfermann & Gross, 1997; Crook & Robertson, 1997; Lang & Heckhausen, 2001; Martin, Fogarty, & Albion, 2015; Werthner & Orlick, 1986). Planned, or voluntary, sport retirement occurs when athletes choose in advance to leave their sport or have made preparations in relation to their transition out; such preparations may include identifying a new job focus, planning for pregnancy, marriage, starting a new relationship, and/or important personal achievement (Cecic Erpic et al., 2004). Unplanned, or involuntary, sport retirement often is associated with athletic injury, death of family members, personal failures, and being unexpectedly cut from the team. For example, Alfermann et al. (2004) assessed the cognitive, emotional, and behavioral difficulties of retirement in a sample of 254 national and international level athletes from Germany, Lithuania, and Russia. They found that planned retirement (e.g., retirement due to other profession or family related decisions) correlated with higher satisfaction with their sport career and more positive (i.e. freedom, happiness, joy, relief) and less negative

(i.e. anxiety, emptiness, sadness, uncertainty) emotions after termination. Furthermore, in a sample of European athletes who had been retired for less than four years, the athletes who terminated their career involuntarily (i.e., personal failure, loss of job, death of family member, injury) experienced more recurrent and more severe difficulties than those who retired voluntarily (Cecic et al., 2004). Specifically, these athletes, compared to the voluntary retirees, expressed more severe emotional difficulties, such as feelings of incompetence in activities beyond sport, lack of self-confidence, low self-respect, and diminished self-esteem. These same athletes also rated their acclimatization to post-sports life as more negative, specifically experiencing more occupational difficulties and loneliness and a longer time adjusting to life without sport.

In a meta-analysis of the career transition in sport literature, Park, Lavallee, and Tod (2012) concluded that voluntariness, or degree of control athletes had over decision to retire is positively associated to improved quality (i.e. fewer experiences of negative emotions such as fear and loss, more positive interpersonal experiences, fewer feelings of loneliness, positive career transition, less negative self-perception) of athletes' transition. Further, researchers determined athletes who experienced involuntary retirement experienced higher levels of negative emotions like "fear of social death, or dying, sense of betrayal and social exclusions and loss of identity" (p.11). Therefore, athletes indicated their choice of retiring from their sport, led to a more positive transition and fewer feelings of loss, identity crisis and distress. For example, an athlete who is aware that he is going to be graduating at the end of the year, is positive about future opportunities, and may begin to identify possible career paths for himself.

Although several researchers have examined social support among involuntarily-retired injured athletes (e.g. Ford & Gordon, 1993), little research has been conducted in the area with

voluntarily retired athletes. Traditionally, voluntary transitions from sport have been associated with the athletes who have alternative skills or avenues they decide to pursue (Blinde & Greendorfer, 1985), have become worn-out by the expectations associated with being an athlete (Sinclair & Orlick, 1993), or have completed their sport or collegiate eligibility. These examples of voluntary transitions typically have been found to not be particularly detrimental to the athletes' psychosocial well-being, likely due to their feeling a sufficient level of control in regard to their choice (Baillie, 1993; Lerch, 1982; Rosenthal, 1982; Taylor et al., 2005; Wylleman, de Knop, Menkehorst, Theebom, & Annerel, 1993). For example, qualitative research done by Fortunato & Marchant, (1999) on 30 recently retired (i.e. less than 18 months) Australian Football players determined that athletes who had terminated careers on a voluntary basis or remained involved in their sport after they stopped competing (e.g., as a coach, or assistant or masters level competitor), experienced more positive emotions (higher self-esteem, better self-concept, more hope for a career) than those who ended their careers due to injury or de-selection. This study suggests that athletes who retire on their own accord adjust better than those who do not have that choice, though such research has not addressed how other psychosocial or identity-related factors also may play a role in determining athletes' positive psychosocial and behavioral health post-retirement

When thinking about the voluntary vs. involuntary aspect of retirement, researchers have acknowledged that it is important to consider how athletes' appraise the reason for the retirement, such as due to injury or being cut from a team. That is, the way athletes think about the factors that may be influencing their reactions to retirement are more important than the factor/event itself. Consistent with Taylor and Ogilvie's (1994) model on retirement, Harvey, Weber, and Orbuch (1990) highlighted that athletes' perceptions of their transition out of sport

would be defined through the story (or narrative) they constructed (i.e., reason for transition, how they feel about it, and what it means for the future); the construction of such narratives serves human beings' basic needs for explanation, meaning, and control (Baumeister, 1991). Whether retirement is initiated by event (e.g., injury, conclusion or termination of collegiate eligibility, dismissal from team, forced retirement) or the athletes themselves (e.g., choosing to leave the sport and no longer compete), how they are able to explain (and make meaning about) and process the transition will affect their ability to cope and ultimately how they respond psychologically and behaviorally (Grove et al., 1998). Thus, conceptualizing retirement, not as an objective event with singular meaning but rather as a subjectively experienced, and personally understood, occurrence is a needed part of any research conducted.

#### Readiness

The concept of athletes' "readiness" to retire also has been studied. "Readiness" is defined as a "psychobiosocial state the athlete has, which is improved through recruitment and utilization of the transition resources" (p.71, Alfermann et al., 2004), and has been suggested to lead to better adjustment in retirement. Alfermann et al. (2004) argued that athletes who planned their retirement prior to ending their career, in comparison to those athletes who had an unplanned retirement, exhibited higher "cognitive, emotional, and behavioral" readiness for their career transition (p.71). This "readiness" was illustrated by athletes with planned retirement having fewer negative emotions (e.g. anxiety emptiness, sadness) after career termination, higher life satisfaction, and fewer difficulties adjusting to a new career due to striking a balance between utilizing transition resources (i.e. retirement planning or support programs) and coping with transition barriers. Stambulova, Stephan, & Japhag, (2007) also found that planning for retirement resulted in more advantageous emotions and coping behaviors in the transition, as

well as favorable emotional reactions to termination (e.g., feeling of freedom, accomplishment, less use of avoidance coping strategies, personal satisfaction and higher self-esteem). More specifically, Stambulova, Stephan, & Japhag (2007) determined that a positive transition indicates the effective use of available resources and avoidance of, or coping successfully with, various transition barriers (e.g., interpersonal conflict, difficulties managing lack of sport and other responsibilities, change in athletic identity). As highlighted previously, research using Taylor and Ogilvie's (1994; 2001) model has revealed that considering factors, such as athletic identity, perception of control and other developmental experiences, along with "readiness" can be useful in developing specific interventions to aid athletes in their transition out of sport (Dimoula et al., 2013; Knights et al., 2016).

#### Other Factors

In addition to support networks, Sinclair and Orlick (1993) identified other important factors for researchers to consider, such as internal "support networks" (i.e. self-confidence, personality factors, skills outside of sport; p. 140), as well as available institutional support and physical settings that can affect athletes' perceptions of, and responses to, retirement in retiring athletes. When teammates and coaches, for example, are supportive outside of the sporting domain, or there is backing from counselors, educators or support staff at the institutional level, athletes may feel more valued, integrated, and reinforced during their time of transition. However, typically within organizations of elite sport, discussing retirement is highly unlikely during the peak of an athletic career. Although organizational support is typically the highest when athletes are in the midst of their careers, it may decrease considerably when athletes retire (Alfermann & Stambulova, 2007). Typically, organizational support can facilitate the transition



process, and aid in the stabilization of the athlete, specifically if programs can focus on development of transferable skills and on interest exploration (Grove, 2006).

### What We Know

Based on conceptual models of athlete retirement (e.g. Schlossberg, 1981; Sinclair & Orlick, 1993; Stambulova, 1994; 1997; 2003; Taylor & Ogilvie, 1994) and results from quantitative and qualitative studies of retired athletes, Lavalley and Wylleman (1999) identified what they believed were the 12 key psychosocial and developmental factors that could influence how athletes cope with, and experience, retirement. These factors included: perception of control over the cause of retirement (Lavalley, Grove, & Gordon, 1997), athletic identity (Grove, Lavalley & Gordon, 1997); social support (Webb, Nasco, Riley, & Headrick, 1998); previous experience with transitions (Swain, 1991); continued involvement in sport-related activities following retirement from competition (Curtis & Ennis, 1988); degree of occupational planning (Grove et al., 1997); identity foreclosure (Murphy, Petitpas, & Brewer, 1996); socioeconomic status (Kleiber, Greendorfer, Blindc, & Sandall, 1987); transferable skills (Sinclair & Orick, 1993); achievement of sport-related goals (Sinclair & Orlick, 1993); provision of career transition support services (Gorely, Lavalley, Bruce, Teale, & Lavalley, 2001); and having a new focus after retirement (Baillie & Danish, 1992). The 12-item British Athlete Lifestyle Assessment Needs in Career and Education (BALANCE) scale represented these 12 factors within a self-report questionnaire. Through their ratings of each item, athletes could, in essence, appraise the salience of each factor in relation to their transition out of sport. In one study that combined the 12 items into a total score that represented the quality of athletes' readiness to retire (higher scores represented more support/readiness), Lavalley (2005) surveyed 41 athletes three weeks after sport termination and then again four months later. Athletes were given the

BALANCE scale to assess life events and needs in their transition. At pre-test, both the post-intervention group and control group were found to have had similar adjustment experiences with regard to their sports career termination given their score on the BALANCE Scale. The treatment group underwent a short intervention that focused on the development of transferrable life skills and increasing coping capabilities and skills. Lavallee determined that being involved in the life development intervention led to improvements in the athletes' BALANCE scores from pre-intervention, which indicated more positive perceptions of their adjustment in retirement. Although the study assessed how the BALANCE scale can be utilized to target specific factors and implement initial resources and tools with retired athletes to support their transition, Lavallee, however, did not take into account that the study had varied terms of intervention duration, a long recruitment period, as well as no follow-up study to identify how the athletes fared in the long-term and if their perception changed regarding retirement. More consistent interventions based off the BALANCE scale, as well as longitudinal studies to assess change in well-being and adjustment difficulties are essential to continue developing resources for transitioning athletes.

In a study of 217 female collegiate athletes who competed in swimming and gymnastics in Division I athletics and had been retired from two to six years, Wartalowicz and Petrie (under review) examined the independent relationships of the 12 factors measured with the BALANCE scale to the athletes' depressive symptomatology, body satisfaction and satisfaction with life in retirement. Four main psychosocial and developmental dimensions emerged as being salient, although numerous psychosocial and developmental dimensions were assessed using the BALANCE scale. Wartalowicz & Petrie found that the extent to which the athletes believed that they had achieved their goals in sport, developed a new focus in life after sport, had been

involved in other areas of life outside of sport while competing, and remained involved in sport-related activities in retirement were most important in understanding their psychological well-being in retirement. These dimensions were significant, even after controlling for the number of years since they had concluded being active in their sport and their current body composition (i.e., BMI). Coinciding with past research (e.g., Baillie, 1993; Stambulova et al., 2009; Werthner & Orlick, 1986), developing a new life focus following their transition out of sport was the most significant of the four dimensions, being related to lower levels of depressive symptomatology and more body and life satisfaction.

Their study, however, was limited in two important ways. First, all measures were completed at the same time, thus athletes had to think back to when they were retiring from their sport to answer the BALANCE items. Thus, it was not possible to determine the temporal relationships among the measures. For example, athletes who had achieved their sport goals may have been less depressed in retirement, however, those athletes could have examined their sporting experience and accomplishment retroactively and perceived themselves as having achieved their goals several years after retirement and be unable to recall if they had perceived themselves to have accomplished their goals shortly after graduation. Second, they assessed the athletes' two to six years after they had retired, which does not allow for a determination of how these factors may have affected the athletes during the months immediately following retirement from sport. Thus, researchers may want to adopt a longitudinal approach in which retiring athletes are assessed in the month or so prior to leaving their sport and then followed during the first few months post-retirement. Understanding the extent to which each factor was related to athletes' psychosocial functioning in the first months of retirement would inform researchers regarding which ones were most salient in relation to which outcomes and thus should be

addressed in interventions that are developed to assist athletes with their transition into retirement. For example, if research determined that having a new focus after sport, athletic identity and the development of transferrable skills were the factors related most strongly to positive outcomes in the first several months of transition, these areas could be targeted through interventions during the athletes' final year of athletic eligibility in universities.

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