

The Relationship between Burnout, Motivation, and Exercise Habits in Retired College Athletes

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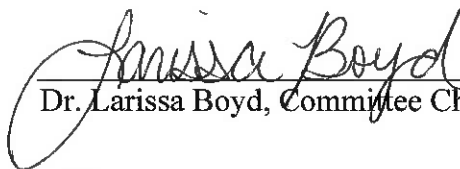
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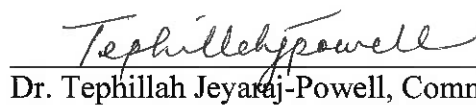
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Abstract

The effect of sport burnout on retired college athletes has not been widely researched. However, there are several studies that show sport burnout is present in athletes and can be influenced by different factors, including motivation. Also, studies have shown that physical activity plays an important role in any college aged person and can decrease in former college athletes in retirement. Therefore, the purpose of this research was to review athlete burnout, motivation, specialization, and exercise habits in retired college athletes. Participants, recently retired within two years and played at least one full season filled out the Athlete Burnout Questionnaire (ABQ), International Physical Activity Questionnaire – Short Form (IPAQ-SF), Sport Motivation Scale (SMS), and demographic questionnaires voluntarily. Athletes were recruited via email blast to the UCO student body. Pearson's Product Momentum Correlation was conducted to see if there was any relationship between the variables. A significant relationship did not exist between any of the variables ($p > .05$); therefore, a multiple regression was not used to further analyze. The researcher hypothesized that motivation would show a strong relationship with exercise habits, burnout would show a strong relationship with decreased exercise habits, and sports specialization would show a strong relationship with decreased exercise habits and increased burnout in retired college athletes. The researcher concluded there was no relationship between burnout, motivation, specialization, and exercise habits in this population. Further research is suggested to investigate other relationships like coach's influence on burnout and observing burnout at different points of athlete's careers.

CHAPTER ONE: INTRODUCTION

Significance of the Study

Fewer than 2% of NCAA student athletes go on to be professional athletes (NCAA.org, 2014). This means that 98% of college student-athletes will end their sports career after college, and many struggle with losing their identity as it is closely tied to the sport they have participated in for several years (Madigan, Rumbold, Gerber, & Nicholls, 2020). College athletics are very intense, grueling, and exhausting on the body both mentally and physically. The athlete may also experience athlete burnout at some point in their career which can cause them to lose motivation. If an athlete becomes burnt out from their sport and being physically active, more than likely they will not exercise the appropriate level after their career is over. Burnout was a common syndrome experienced by athletes, often defined as reduced accomplishment, physical and emotional exhaustion, and cynicism or devaluation (Cresswell & Eklund, 2005a; Cresswell & Eklund, 2005b; DeFreese & Smith, 2013; Madigan et al., 2020; Gustafsson, Hassmen, & Podlog, 2010; Russell & Molina, 2018; Sorkkila, Aunola, Salmela-Aro, Tolvanen, & Ryba, 2018). It was evident that burnout was present in some athletes, and some experience burnout at different points in their career or not at all (Cresswell et al., 2005a; DeFreese et al., 2013; Madigan et al., 2020; Salmela-Aro et al., 2018). There were some influences that impact burnout in a positive or negative manner: coaches, parents, amotivation, motivation, and peers (Aunola et al., 2018; Into, Keegan, Harwood, Spray, & Lavallee, 2009; Perttula, Aunola, Sorkkila, & Ryba, 2020). Since burnout can influence an athlete's motivation, it may carry over and affect their exercise habits. The recommendation was to participate in at least 150 minutes of moderate intensity physical activity every week to see benefits, however some retired athletes may not reach this goal due to previous burnout and amotivation (Ball, Bice, & Maljak, 2018).

Researchers have not directly researched the link between athlete burnout, motivation intervention, and exercise habits. Researchers have found relationships between motivation and burnout, with burnout often decreasing while motivation was increasing (Cresswell et al., 2005b; Dubuc-Charbonneau & Durand-Bush, 2015). Burnout in athletes could be affected in many aspects, and researchers discovered ways, like coping and hope, to help decrease athlete burnout (Gustafsson et al., 2010; Madigan et al., 2020). There was a gap in the literature to determine if burnout affected athletes' exercise habits after their sports career, however there was evidence that student athlete alumni had a decreased sense of importance in exercise compared to nonathletes (Sorenson, Romano, Azen, Schroeder, & Salem, 2015). Retired athletes may not be reaching the physical activity guidelines which may indicate a need for physical activity interventions with retired athletes, their exercise habits, and their exercise motivation. This research proposal determined the relationship between athlete burnout, motivation intervention, and exercise habits.

Purpose and Hypothesis

The purpose of this study was to examine the relationships between burnout, motivation, and exercise habits in retired college athletes. A secondary purpose was to determine if sports specialization related to motivation and burnout. Are motivation and burnout, post collegiate sport participation, associated with physical activity habits? The null hypothesis stated that athlete burnout, motivation, and sports specialization will not have a relationship with exercise habits in college athletes. The research hypotheses were:

- Motivation will have a strong, positive relationship with exercise habits in retired college athletes.

- Burnout will have a strong, negative relationship with exercise habits in retired college athletes.
- Sports specialization will have a strong, negative relationship with exercise habits and a strong, positive relationship with burnout in retired college athletes.

Limitations

Limitations of this study included the participants not filling out the surveys and data collection completely. This caused inconsistencies in the data collection, so those participants' answers were eliminated. One limitation was participants who were currently playing sports or were more than two years removed from playing filled out the survey which eliminated their responses. Another limitation was individuals may have had outside influences that caused a clouded mind or frustrated state while they were filling out the survey. Also, the data collected was self-reported data with surveys, and if surveys were long, survey fatigue could occur. This could cause inaccurate information or data based on the current mood of the participant. Participants were asked to think back to when they experienced burnout while they were playing sports. This could cause memory concerns because it may be as many as two years that they have experienced burnout. Another limitation of this study was the sample size and population. The email blast was only sent to enrolled University of Central Oklahoma (UCO) students, and some participants failed to complete the survey fully.

Delimitations

Delimitations include the sample convenience from the University of Central Oklahoma who are recently retired, ages 18-28 years old. Another delimitation included athletes who were two years or less removed from playing sport in college. The participants must have competed in

one full season of their sport. Also, participants should also be able to perform physical activity or have no restrictions from current injuries.

Assumptions

The researcher has assumed that participants were volunteers that filled out surveys, they understood the survey, and were able to self-identify burnout, motivation, sports specialization, and exercise habits based on the definitions included. The researcher also assumed that the participants provided information that they had experienced athlete burnout. It is assumed that response bias will occur. It was estimated that less than 10% of athletes perceived themselves to have had experienced all three dimensions of athlete burnout, however there was a greater prevalence in one or two dimensions of burnout (DeFreese et al., 2005).

Definition of Terms

- Athlete burnout – A non-clinically diagnosed common syndrome experienced by athletes, often defined by reduced accomplishment, physical and emotional exhaustion, and cynicism or devaluation (Cresswell & Eklund, 2005a).
- Motivation – Motivation that is identified as either extrinsic motivation, intrinsic motivation, or amotivation by a retired college athlete using the Sport Motivation Scale (SMS) (Pelletier, Tuson, Fortier, Vallerand, Briere, & Blais, 1995).
- Extrinsic motivation – Situations that are regulated by the pursuit of an outside outcome that is identified, introjected, and has external regulation in an activity by retired college athletes (Cresswell et al., 2005a).

- Intrinsic motivation – An activity occurs purely for the rewards essential to that experience in retired college athletes, such as feelings of accomplishment, satisfaction, and enjoyment (Cresswell et al., 2005a).
- Amotivation – a decline in the motivation to initiate or continue in physical activity in retired college athletes (Lee, Jung, Park, & Kim, 2015).
- Retired athlete – an athlete who has ceased playing their respected sport due to eligibility, injury, or self-removal within the last two years.
- Physical activity (PA)– The recommendation for physical activity in retired college athletes is to participate in at least 150 minutes of moderate intensity aerobic activity every week to see benefits (Ball, Bice, & Maljak, 2018).

CHAPTER TWO: LITERATURE REVIEW

Introduction

Many student-athletes have built an identity in their sport and play that sport their entire life. Once their sports career has come to an end, it may be difficult for them to find a new way to be active and fuel their competitive drive. Physical activity is a part of every sport and is important to continue to incorporate it in the life of every athlete. The recommendation for physical activity in adults is to participate in at least 150 minutes of moderate intensity aerobic activity every week to see benefits (Ball, Bice, & Maljak, 2018). Athletes perform physical activity in competition, practice, weights, and conditioning; however, athletes may need to find a new outlet to meet the physical activity guidelines once in retirement. Many factors can contribute to an athlete ceasing to exercise after retirement from their sport like lack of motivation, insufficient time, decreased self-efficacy, or possibly burnout (Sindik et al., 2017; Anderson, Wojcik, Winett, & Williams, 2006; Sorkkila, Ryba, Aunola, Selanne, & Salmela-Aro, 2020). The purpose of this literature review was to examine the existing research regarding burnout in sport, motivation, and physical activity habits. This literature review observed the methods for searching the literature, reviewed the results of burnout, motivation, and physical activity habits, and discussed the major findings in the literature.

Methods

The literature search for articles was done through many databases: EBSCOHost SPORTDiscus, ProQuest, Elsevier Science Direct Journals, Taylor & Francis Journals Complete, PudMed, Journal at Ovid LWW Nursing and Health Professions Premier 2019. The following key words were used for the search strategy: *Burnout, burnout and athletes, burnout and exercise habits, exercise and retirement, college athletes and burnout, Athlete Burnout*

Questionnaire, relationship between burnout and sports, and college athletes and exercise. The search strategy generated 31 articles that were examined by the researcher. The inclusion criteria consisted of younger aged athletes (17-30), evident sport burnout, physical activity habits, definition of burnout, a type of questionnaire to determine burnout, and an appropriate primary source. Not all of the articles were required to have all of these terms, however the articles needed to have original research, based on direct observation, and be peer reviewed of the 31 articles found, 29 total articles met the criteria for the literature review. Quality standards were evaluated for risk of bias by assessing qualitative or quantitative research, internal validity, external validity, and thorough reporting. High quality articles were selected based on variables that included athletes who filled out questionnaires about burnout, motivation, and exercise habits. Also, the articles needed to be original research, published within the past 25 years, and reviewed the results of the questionnaires. Low quality articles were identified on those that only included one of the high-quality characteristics, used different questionnaires than in the high-quality articles, and introduced new questionnaires. Articles were not included if they did not meet the primary source criteria or were a systematic review. Qualitative studies and other peer-reviewed articles meeting the criteria were included.

Results

Burnout, Motivation, and Sport.

Burnout is a common syndrome experienced by athletes, often defined as reduced accomplishment, physical and emotional exhaustion, and cynicism or devaluation (Cresswell et al., 2005a; Cresswell et al., 2005b; DeFreese et al., 2013; Madigan et al., 2010; Russell et al., 2018; Sorkkila et al., 2018). A total of 392 New Zealand male amateur rugby players participated in a study reviewing the association between motivation types and burnout. The Athlete Burnout

Questionnaire (ABQ) and Sport Motivation Scale (SMS) were completed, then were analyzed by measurement model analyses and structural model analysis ($r = -.27 - 0.61$; $r = -0.05 - 0.04$). Raedeke and Smith (2001) were the first researchers to develop the ABQ, while the SMS was validated by Harbichova, Komarc, & Scheier (2015). The results showed amotivation was positively linked with burnout, and intrinsic motivation was negatively linked with burnout; however, external motivation regulation was not significantly linked to burnout. Overall, motivational types and burnout varied in comparisons with amateur rugby players (Cresswell et al., 2005a).

Cresswell et al. (2005b) again examined the relationships between burnout and different motivational types with improved canonical correlation analyses and simple correlation analyses. This time a total of 199 New Zealand male professional rugby players filled out the ABQ and SMS and were analyzed using bivariate and canonical correlations: low intrinsic motivation ($r = -.51$), associated sense of reduced sport devaluation ($r = .95$) and accomplishment ($r = .67$). Amotivation ($r = .92$) was correlated with an increased frequency of burnout traits. Burnout was negatively linked with intrinsic motivation and positively linked with amotivation just as it was discovered in the previous study by the same researchers (Cresswell et al., 2005b). Intrinsic motivation was defined by three sub-constructs: intrinsic motivation to accomplish, intrinsic motivation to know, and intrinsic motivation to experience, which was different from extrinsic motivation which was influenced by outside sources (Harbichova et al., 2015). Dubuc-Charbonneau et al. (2015) concluded student-athletes who participated in a motivation type intervention could effectively manage their environment, reduce stress, and improve functioning.

Burnout in athletes tends to correlate with school burnout when they play sports while in school. School burnout was defined as school-related cynicism, school-related exhaustion, and

feeling of inadequacy in school (Salmela-Aro et al., 2018). A total of 391 Finnish student-athletes filled out multiple surveys to measure burnout and achievement: Sport Burnout Inventory-Dual Career form (SpBI-DC), School Burnout Inventory (SBI) form, and Perception of Success Questionnaire for sport and school. Cross-lagged models were used to analyze each burnout subscale in school and sport ($\chi^2(110) = 212.193; p < .001$; $\chi^2(444) = 915,456; p < .001$; $\chi^2(440) = 902,948; p < .001$). School exhaustion at the start of the year predicted sport exhaustion at the end of the year, and school-related inadequacy and cynicism did not forecast related indicators in sport (Sorkkila et al., 2018). If burnout was present, it can reduce performance, increase the risk of depression, and negatively affect interpersonal relationships. School burnout along with athletic related burnout can cause athletes to leave and stop playing their sport indefinitely.

Coping could be a way to manage burnout in athletes. Coping was described as the behavioral and cognitive efforts that someone makes so that they can manage external and internal causes of psychological stress (Madigan et al., 2020). Madigan et al. (2020) investigated if coping tendencies, problem-focused or avoidance coping, forecasted differences in athlete burnout over time in 141 junior academy athletes. Burnout was measured using the ABQ, coping tendencies were measured using the Modified COPE, with added measures to investigate avoidance and problem-focused coping. The study concluded that coping tendencies could be an important factor in athlete burnout (Madigan et al., 2020). Not only can coping affect burnout, but hope can contribute positively to burnout as well. Hope is defined as a positive motivational state centered on an interactively developed sense of goal pathways and successful agency thinking (Gustafsson et al., 2010). Gustafsson et al. (2010) had athletes complete the State Hope Scale (SHS) and ABQ with the low-hope group recording the highest scores on all burnout

elements. Males recorded significantly higher scores than females on the total hope scale (females: $M = 15.1$, $s = 4.6$; males: $M = 34.9$, $s = 6.9$; two-tailed $p < 0.001$). A lack of hope can cause a reduced sense of accomplishment and sport devaluation, and this suggests that hopelessness may be more impactful than predicting the cognitive aspects of sports burnout (Gustafsson et al., 2010).

There has been a concern with specialization in sport like heightened stress, limited motor skill development, decreases in intrinsic motivation, and athlete burnout. Russell et al. (2018) examined female high school athletes' sport burnout and motivation based on whether they were specialized in one sport or participated in multiple sports. A one-way MANOVA that examined specializers did not show significance, meaning that the score on the Sport Motivation Scale II (SMS-II) was not affected by specialization position (Wilk's $\lambda (6, 70) = .945$, $p = .67$). The other one-way MANOVA that was conducted to examine ABQ differences was also not significant (Wilk's $\lambda (3, 73) = .978$, $p = .65$). The results of the MANOVA tests revealed that neither athletic burnout nor sport motivation was affected by specialization status (Russell et al., 2018).

Social support also influences burnout, and DeFreese et al. (2013) researched how college athletes perceive their teammates as support providers and how teammate social support was linked with self-determined motivation and athlete burnout. A total of 235 college athletes completed the Social Provisions Scale (SPS), the Inventory of Socially Supported Behaviors, the Social Support Questionnaire, the ABQ, and the SMS. Significant team-level variation was calculated for physical and emotional exhaustion in the ABQ ($ICC = .19$, $p < .05$), however it was not decreased for sport devaluation or accomplishment dimensions in the SMS and SPS ($ICC < .01$, $p > .05$). The study suggested that promoting perceived support accessibility may be

beneficial for enhancement of self-determined motivation and prevention of burnout (DeFreese et al., 2013). Many things can impact and increase burnout, however there are some influences on burnout that can help decrease it.

Physical Activity and Exercise Habits.

Physical activity offers well-established health benefits; however, it is uncertain whether young adults sustain their physical activity behaviors throughout their entire life. One way to measure physical activity is the IPAQ which measures different aspects of physical activity in one's life (Kim et al., 2013). Sorenson et al. (2015) conducted a study to observe the life span exercise behaviors in elite intercollegiate student athletes. Current student athletes stated significantly increased exercise importance than nonathletes ($p < 0.001$, Cohen $d = 1.96$). However, no significant differences in physical activity behavior or perceptions were observed between alumni student athletes and nonathletes. Nonathletes exhibited regular exercise habits across the three age strata (current students, younger students, and older alumni), and alumni student athletes resulted in significantly reduced exercise volume compared with current student athletes. Alumni athletes were 10% as likely as current student athletes to achieve exercise guidelines. There were no significant differences between nonathletes and alumni student athletes, meaning that the alumni student athletes did not sustain elevated levels of physical activity across their life span compared to nonathletes. Student athletes were 30 times more prone to achieve the exercise guidelines; however, nonathletes continued their exercise behavior across their life span (Sorenson et al., 2015).

Younger people tend to be looked at as being more fit and active, however some data suggests that people aged 65-74 were more likely to participate in vigorous exercise than younger and middle-aged adults (Anderson, Wojcik, Winett, & Williams, 2006). This may have

something to do with self-efficacy and motivation to exercise. Anderson et al. (2006) evaluated the social cognitive model of exercise among 999 racially diverse older adults. A latent-variable SEM was used to calculate the social-cognitive model of physical activity which showed older participants felt increased support compared to younger participants (younger: $M = 3.19$, $SD = 1.24$; older: $M = 3.67$, $SD = 1.21$; $p < .001$). Self-regulation exerted the most effect on physical activity ($\beta_{\text{total}} = .36$), and participants who prioritized time for exercise were more likely to perform physical activity. Exercise interventions should concentrate on improving self-regulatory activities such as scheduling, planning, and integrating exercise into their daily schedule, as well as setting goals and having reasons to round out the self-regulatory method (Anderson et al., 2006). Once an athlete retires, they are no longer required to attend practices, go to weights, or anything else relating to their sport.

Athletes' physical activity habits came from their sport, and they tend to identify themselves with their sport. Athletic identity can be defined as the amount of individuality and strength to which a person identifies themselves with their sport. This can cause athletes to neglect other aspects of their life and only focus on their identity in their sport (Sindik, Furjan-Mandic, Zenic, Zovko, Stankovic, Savic, . . . Kondrič, 2017). Participating in sport has the potential to motivate and increase interest in college education in school and intrinsic motivation in sport. Sindik et al. (2017) looked at a stratified sample of 1498 students and gathered data during exercises and lessons using the Athletic Identity Measurement Scale (AIMS) and the Psychological Skills Inventory for Chinese Athletes (PSICA). One principal component was secured from the AIMS questionnaire, while four principal components were secured in the PSICA questionnaire. The relationships between years of engaging in sports ($p = .36$), light exercise ($p = .05$), strenuous exercise ($p = .11$), the variables in sport identity ($p = -.11$), and

psychological skills ($p = .04$) were almost all significant (Sindik et al., 2017). Not only do student athletes have to learn a new identity in retirement, but they also face barriers to be physically active. Ball, Bice, & Maljak (2018) conducted a study with 217 college students who filled out the Barriers to Being Active Questionnaire, the Measurement of Physical Activity Motivation questionnaire, and the Physical Activity Level Assessment questionnaire. Participants who took part in more minutes and days of moderate and vigorous exercise formed healthy behaviors that help eliminate barriers that may stop or limit exercise (Ball et al., 2018).

Forming exercise habits can make it easier to reach 150 minutes of moderate to vigorous intensity exercise per week, however many adults do not meet that recommendation (Kaushal, Rhodes, Meldrum, & Spence, 2017). Kaushal et al. (2017) observed 120 participants at four different gyms to investigate if exercise habits could be predicted. Preparatory habit ($r = .22, p = .00$), intention ($r = .29, p = .00$), and performance habit ($r = .20, p = .01$) were all linked with exercise, with preparatory habit and intention being the strongest predictors of exercise. Having a good habit for exercise preparation proved more important than having a good habit during exercise performance (Kaushal et al., 2017). Beck, Gillison, and Standage (2010) determined that social relationships, lifelong habits of physical activity, and a regular exercise routine factor into exercise habits once in work retirement, and that physical activity provides a new sense of purpose and motivation, which helps manage physical activity levels.

The transition to retirement from sport is an important turning point in an athlete's life. Van Dyck, Mertens, Cardon, De Cocker, & De Bourdeaudhuij (2017) conducted a study that sought to increase physical activity and decrease sedentary behaviors in retired adults. A total of 40 Belgian adults who were recently retired participated in their longitudinal study. Focus group interviews were arranged to discuss four main themes: current physical activity and sedentary

behaviors, opinions about current available physical activity programs for retired adults, determinants of physical activity and sedentary behavior during early retirement, and ideas and advice regarding possible new physical activity programs and interventions for retired adults. Retired individuals should choose which physical activity intervention they would like to do to bring enjoyment while also using Self-Determination Theory (SDT) and Self-Regulation theories to develop an exercise routine (Van Dyck et al., 2017).

Influences on Burnout.

There are many factors that can lead an athlete to become burnt out in their respective sport. Environment, coaches, and parents are some factors that can increase or decrease the occurrence of burnout in sport. Aunola, Sorkkila, Viljaranta, Tolvanen, & Ryba (2018) investigated the role of parental psychological control and affection as possible protective or risk factors in the progression of burnout in adolescents in upper secondary school. The SDT states that environmental support was crucial to achieve the best psychological health and growth, like support from parents to meet the adolescents' natural need for autonomy, relatedness, and competence. Student athletes from six different Finnish secondary schools participated in this study along with their parents. They completed the SBI questionnaire and the SpBI-DC questionnaire to measure both school and sport burnout. The parents completed the Block's Child Rearing Practices Report for measuring parental affection and psychological control. The results showed that females ($M = 1.91, SD = 0.04, p < .001$) had a slightly higher occurrence of burnout than to males ($M = 1.73, SD = 0.04, p < .001$). Student athletes who were involved with team sports showed a decrease in the likelihood of burnout than those who were in an individual sport ($M = 1.82, SD = -0.11, p = .02$). Overall, burnout in sport increased over the duration of the year, and an increase in maternal affection decreased burnout compared to psychologically

controlling mothers who increased the occurrence of burnout (Aunola et al., 2018). This shows that parenting can play a role in sport burnout in athletes, as do coaches.

Coaching can influence the presence burnout. Into et al. (2020) examined different coaching environments and how they affect symptoms of burnout in school and sport. According to the achievement goal theory (AGT), there are two different motivational climates a coach can create: a talk-involving climate and an ego-involving climate. The ego-involving climate was shown to produce an increase in sports burnout. A total of 490 Finnish adolescent students in their second year of secondary school were asked to complete the SBI questionnaire, the SpBI-DC questionnaire, and the Empowering and Disempowering Motivational Climate Questionnaire. A latent profile analysis was used to recognize different coaching environments using five different categories: controlling coaching, socially supportive, autonomy-supportive, ego-involving, and task-involving. Cross-tabulations were used to observe type of sport and gender differences between the coaching environments, which was followed up with MANOVA. There was no significance found between gender and sport when compared with the coaching environment, however athletes in the empowered group showed decreased feelings of exhaustion, levels of exhaustion, and levels of cynicism. The disempowered groups showed increases in those categories. Coaches who stress that everyone on the team has an important role through a talk-involving climate decrease the feelings of burnout in an athlete (Into et al., 2020). Coaches and parents have a strong influence on a child's motivation through their leadership styles, pre-performance behaviors, and affective responses. A player's peers also influence motivation through collaborative behaviors, competitive behaviors, social relationships, and evaluative communications (Keegan et al., 2009).

Aspects of Athlete Burnout.

Monfared, Lebeau, Mason, Cho, Basevitch, Perry,... Tenebaum (2021) reviewed the bio-physio-psychological aspects of athlete burnout, investigated if early diagnosis of athlete burnout could be recognized in young athletes, and observed preventions and health issues of burnout. Forty-two high school and middle school athletes during two weeks of their season completed the ABQ, a self-developed self-comfort questionnaire, measured their salivary cortisol level and physiological distress measures by a biofeedback system, blood volume pulse (BVP), galvanic skin response (GSR), and respiratory rate (RR). When salivary cortisol increased, there was an increase in burnout ($p < .001$; $\beta = 0.242$). Salivary cortisol has shown to be one biological marker of distress. When self-comfort increased, salivary cortisol decreased ($p < .001$, $\beta = -0.189$). Both biological and psychological markers related to the occurrence of burnout in athletes (Monfared et al., 2021).

Sorkkila et al. (2020) was the researcher who introduced and investigated a new instrument called the SpBI-DC that measured both school and sports burnout. A total of 391 Finnish student athletes and 260 mothers were measured by the SpBI-DC, sport task values questions, depressive symptoms, and self-esteem (Sorkkila et al., 2020). Comparatively, Isoard-Gauthier, Oger, Guillet, & Martin-Krumm (2010) investigated the validity of the ABQ in French in 434 students from a French handball team. This study sought to validate the French version of the ABQ by utilizing two samples and two phases and to show that a version of burnout exists that unites one second-order latent variable and three first-order latent variables. Cronbach's alpha coefficients ranged from .75 to .88. The validity of the French ABQ was validated by the confirmatory factor analysis and the 3-factor model. It proved to be an acceptable questionnaire (Isoard-Gauthier et al., 2010).

Discussion

The major findings of this literature review include ten articles that included the ABQ (Cresswell et al., 2005a; Cresswell et al., 2005b; DeFreese et al., 2013; Gustafsson et al., 2010; Isoard-Gautheur et al., 2010; Madigan et al., 2020; Monfared et al., 2021; Russell et al., 2018; Sorkkila et al., 2018; Sorkkila et al., 2020). Radeke and Smith (2001) were the first to compile this questionnaire. Each study that used the ABQ was able to measure an athlete's level of burnout in sport by assessing 15 items asking about the three different domains of burnout. The total burnout scores were calculated by the different dimensions of burnout, and they showed theoretically expected associations and reliability that are conceptually related to burnout (Cresswell et al., 2005a; Raedeke et al., 2001). These studies confirmed the use of the ABQ in this research. Another questionnaire that was used to measure burnout was the SpBI-DC form (Aunola et al., 2018; Into et al., 2020; Sorkkila et al., 2020). The SpBI-DC was modified by Aunola et al. (2018) from the SBI, that Salmela-Aro, Kiuru, Leskinen, & Nurmi (2009) developed to measure school burnout and measured both school and sport burnout. Research showed that it proved to be a valid and reliable tool for calculating sport burnout in dual career contexts, therefore it would be appropriate to use clinically (Aunola et al., 2018).

This literature review also had major findings regarding motivation, physical activity, and burnout. Ball et al. (2018) stated that creating exercise habits in college can help an individual stay active throughout their life. This is an important habit a student athlete should build upon retirement from their sport. Motivation is a key part of doing and accomplishing anything in one's life and using an intervention on motivation could influence the outcome of burnout. The SDT states that motivation occurs when basic physiological needs are accomplished (Ball et al., 2018). An athlete's identity also plays a part in their motivation. Sindik et al. (2017) defined

athletic identity as a degree of strength and exclusiveness when a person recognizes themselves with the athletic role. A change in motivation, identity, self-efficacy, or self-confidence can affect how an athlete exercises after their playing career in sports (Anderson et al., 2006; Sindik et al., 2017). Regular exercise also improved the health of athletes, increase muscle strength, reduce all-cause mortality, preserved bone mass, and many others that improved the quality of life in an individual (Sorenson et al., 2015). These articles solidified the topic of motivation in this research.

There were outside factors that influenced athletes and their occurrence of athlete burnout. Athletes were seen to have a higher occurrence of sport burnout when they were high-stressed and already experiencing school burnout (Aunola et al., 2018; Into et al., 2020). The occurrence of sport burnout was increased with greater psychological maternal control (Aunola et al., 2018). Coaches also play a vital role in the frequency of sport burnout (Cresswell et al., 2005a). When coaches emphasized that every player had an important role on the team, there was less occurrence of sport burnout (DeFreese et al., 2013; Into et al., 2020).

There were some limitations found throughout the literature review. There were cross-sectional studies conducted, and they were unable to anticipate future results of the study (Cresswell et al., 2005a; Gustafsson et al., 2010; Into et al., 2020; Russell et al., 2018). Some research studies struggled with sample size and finding different demographic variety in participants (Gustafsson et al., 2010; Monfared et al., 2021; Russell et al., 2018). Some research studies did not have a long duration of time for their research which limited their projections on burnout growth and trajectories (Aunola et al., 2018; Harbichova et al., 2015; Sorkkila et al., 2018).

There were many encouraging notes about future studies that could be conducted such as information about the relationship between sport burnout and the specialization in sport which would include information about athlete's unofficial play habits and approximate time spent in practice (Russell et al., 2018). Some researchers suggested that even very low levels of athlete burnout could cause negative effects on an athlete, and future studies may investigate the different levels of burnout and what effect they have on athletes (Cresswell et al., 2005b). Many of the studies made suggestions to investigate other cultural contexts and social environments that were influenced by parents or coaches to create adaptive and maladaptive athlete encounters (Sorkkila et al., 2020; DeFreese et al., 2013).

In conclusion, ten articles used the ABQ and were able to measure and assess athlete burnout (Cresswell et al., 2005a; Cresswell et al., 2005b; DeFreese et al., 2013; Gustafsson et al., 2010; Isoard-Gauthier et al., 2010; Madigan et al., 2020; Monfared et al., 2021; Russell et al., 2018; Sorkkila et al., 2018; Sorkkila et al., 2020). Three articles used the SpBI-DC questionnaire to measure sport burnout and school burnout (Aunola et al., 2018; Into et al., 2020; Sorkkila et al., 2020). Both questionnaires showed significance and validity in their respective studies and produced appropriate results regarding burnout to be included in a clinical setting. Six articles gave recommendations for physical activity, exercise habits, and ways motivation affects activity (Anderson et al., 2006; Ball et al., 2018; Kaushal et al., 2017; Sindik et al., 2017; Sorenson et al., 2015). Motivation intervention during an athlete's career could influence their level of athlete burnout and exercise habits after their career. The results of the literature review showed no connection or research conducted on the relationship of athlete burnout in retired college athletes and their exercise habits or motivation intervention. However, burnout was caused by emotional and physical exhaustion, lack in sense of accomplishment, cynicism, and devaluation. Those

attributes affect an athlete's motivation which in turn affects the motivation to exercise.

Therefore, athlete burnout could possibly affect exercise habits in retired college athletes. The research on motivation and its affect on athlete burnout and exercise habits in retired college athletes is not present. This research poses to fill the gap in the research.

CHAPTER THREE: METHODOLOGY

Participants

The participants were recruited from the University of Central Oklahoma (UCO) student body who previously played collegiate sports within the past two years and had ceased playing sports. Permission to collect data from UCO athletes was obtained from the Institutional Research Board (IRB). Recruitment was conducted via an email blast which was approved by the UCO Marketing and Communications Department. Before starting the surveys, participants were asked read Appendix A and give consent to participate in the study. Both male and female participants were asked to participate, and their sport was not limited to any amount or type. The athletes must have competed at the collegiate level for at least one full season within the past two years. The age range for this study was 18-34 years old. The minimum number of participants needed to participate in this study was 21. This was based on the research conducted by Dubuc-Charbonneau et al. (2015) who achieved a moderate effect size of .65 in the sport devaluation group of the ABQ with 21 participants (Dubuc-Charbonneau et al., 2015). A total of 177 people participated in the survey through Qualtrics®. Participants were eliminated if they did not complete the survey ($N = 34$). Upon further inspection, eight participants were eliminated because they were currently still playing collegiate sports or were more than two years removed from playing collegiate sports. A total of 26 participants' data were analyzed. Demographic information can be found in Tables 1 and 2.

Instruments

The instruments used for data collection were the Athlete Burnout Questionnaire (ABQ), International Physical Activity Questionnaire – Short Form (IPAQ-SF), Sport Motivation Scale

(SMS), and demographic questionnaires. They were converted to a Qualtrics® survey to complete online for data collection.

Athlete Burnout Questionnaire (ABQ)

The ABQ, found in Appendix B, was a 15-item questionnaire that measured emotional and physical exhaustion, sport devaluation, and reduced accomplishment in sport. The questionnaire asked the participant to answer the statements, like “I feel exasperated”, on a 5-point Likert scale with 1 = *almost never* to 5 = *most of the time* (Isoard-Gauthier et al., 2010). Athletes needed to think back to when they played sports and if they experienced any burnout during that time. They were asked to fill out the questionnaire to the best of their ability and knowledge. According to Isoard-Gauthier et al. (2010), four subscales of the questionnaire were measured for validity and reliability in sport motivation: external regulation ($\alpha = .71$), amotivation ($\alpha = .80$), intrinsic motivation to experience stimulation ($\alpha = .84$), and intrinsic motivation to know and toward accomplishment ($\alpha = .68$). Isoard-Gauthier et al. (2010) also observed the validity and reliability of competitive anxiety in the ABQ: somatic ($\alpha = .74$), self-confidence ($\alpha = .79$), and cognitive anxiety ($\alpha = .79$). This questionnaire was supported by the 3-factor model proposed by Raedeke et al. (2001) and internal consistency coefficients.

International Physical Activity Questionnaire – Short Form (IPAQ-SF)

The International Physical Activity Questionnaire Short Form (IPAQ-SF) was a 4-question survey to assess physical activity levels (Lee, Macfarlane, Lam, & Stewart, 2011). This questionnaire, found on Appendix D, was an abbreviated version of the 27-questionnaire International Physical Activity Questionnaire. The IPAQ-SF scores were categorized by the version 2.0 diagram (Figure 1) that was revised April 2004 as inactive, minimally active, and health-enhancing physical activity (HEPA) active. Descriptive statistics can be found in Table 2.

The inactive category was described as no moderate or vigorous activity for at least five days and at least 600 metabolic equivalent of task (MET) minutes. The minimally active category was described as five days of 600 MET minutes of moderate and vigorous activity or moderate and vigorous intensity for less than seven days and less than 3000 MET minutes. The HEPA active category was described as three or more days of vigorous activity for 1500 MET minutes or moderate and vigorous activity for seven days and more than 3000 MET minutes. The IPAQ-SF consistently reported high reliability ($\alpha = 0.66-0.88$; Lee et al., 2011). When comparing the IPAQ-SF with the measurements of a pedometer and accelerometer, there was a range of $p = 0.09$ [19] to 0.39 [36], median = 0.28 for accelerometer and $p = 0.25$ [25] to 0.33 [20], median = 0.28 (Lee et al., 2011).

Sport Motivation Scale (SMS)

The Sport Motivation Scale (SMS), found on Appendix C, was a 28-item questionnaire that measured different types of motivation. This questionnaire was a 7-factor scale that measured three types of intrinsic motivation, three types of extrinsic motivation, and amotivation (Pelletier et al., 2013). The test-retest showed correlations from $.58$ to $.84$ with the mean of $.70$ revealing adequate levels of reliability and validity (Pelletier, Fortier, Vallerand, Tuson, Briere, & Blais, 1995).

Demographic Questionnaire

A demographic questionnaire was created by the researcher to record information about the participants. The questionnaire, found on Appendix E, included questions based on demographic information, prior research, and specific developed questions based on this research. This questionnaire asked qualitative questions like what sport they played in college;

and whether they ever experienced burnout while playing their sport; and what influenced their feeling of burnout?

Procedures

An email blast was sent to the UCO student body approved by the UCO Marketing and Communications Department. The email contained instructions and a link to the Qualtrics® comprised by the researcher which included the demographic, SMS, IPAQ-SF, and ABQ surveys. Two weeks after the email blast was sent, the survey was further distributed by email that contained the Qualtrics® link to the Kinesiology department. Data collection ceased after three weeks from the date of the first email blast. After the data was collected, it was entered into SPSS. Participants were asked if they wanted to be entered to win a \$25 gift card for completing the survey. They were asked to provide contact information at the end of the survey if they wished to be entered. This was not required to participate in the survey.

Statistical Analysis

Descriptive statistics were used to analyze age, ethnicity, sex, years spent in sport, years spent specializing in sport, and number of sports played. Qualitative information was collected and gave reasons for termination of sport, burnout influences, and burnout influences on current exercise habits. The values from the ABQ, IPAQ-SF, and SMS questionnaires were recorded in SPSS. A Pearson's Product Moment Correlation was utilized to analyze the relationship between the following variables: motivation, burnout, specialization, and activity level. There were no correlations that were significant; therefore, a multiple regression analysis was not used to determine if significant variables were also significant predictors of activity levels among retired collegiate athletes. Themes were examined and identified upon evaluating qualitative questions.

CHAPTER FOUR: RESULTS

Introduction

Following the conclusion of the survey, data was entered into SPSS. Demographic information for participants is found in Table 1. Years spent playing sports ($M = 16.12$, $SD = 3.98$) and years spent specializing in a sport ($M = 8.96$, $SD = 5.32$) is found in Table 2. The academic year participants ended their career, the reason for ending, and the sport they played in college are categorized by activity levels in Table 3. Pearson's Product Moment Correlation analysis determined there was no relationship between motivation and exercise habits in retired college athletes or between burnout and exercise habits in retired college athletes (see Table 4). While there was no significant relationship between burnout, motivation, and exercise habits, meaningful information was found within the data collected. Qualitative survey answers gave insight into the specific factors that contribute to burnout and exercise habits in this population. The second common reason reported for burnout was the coach ($n = 5$; HEPA Active: $n = 4$; Minimally Active: $n = 1$); the most common reason was being overworked ($n = 7$; Minimally Active: $n = 1$; HEPA Active: $n = 6$). Some participants experienced burnout and reported no physical activity immediately after they ended their career, but they began to exercise again after some time and were in the HEPA Active category according to the International Physical Activity Questionnaire – Short Form (IPAQ-SF; $n = 4$). Years of specialization in sport and its relationship to motivation and burnout was also analyzed as a secondary analysis (Table 6). However, no significant relationship was discovered between these variables.

Motivation and Exercise Habits

There was no significance found in the relationship between motivation and exercise habits ($r = -.06$, $p = .79$). Exercise habits were self-reported measures of moderate (MET MOD),

vigorous (MET VIG), and total MET (MET TOT) minutes per week. Significant relationships were not present for either MET MOD ($r = .87, p = -.03$) or MET VIG ($r = -.05, p = .82$) intensities. All inferential statistics can be found in Table 5, while activity level categorized by the IPAQ-SF can be found in Table 4.

Burnout and Exercise Habits

There was no significance found in the relationship between burnout and exercise habits. There were three constructs to the Athlete Burnout Questionnaire (ABQ) survey: exhaustion (MET TOT: $r = .07, p = .73$), reduced accomplishment (MET TOT: $r = -.13, p = .54$), and devaluation (MET TOT: $r = .05, p = .82$). Inferential data can be found in Table 5.

Specialization and Exercise Habits

Other aspects of this study were observed beyond the hypotheses. The relationship between years of specialization and exercise habits approached significance for overall physical activity (MET TOT: $r = .38, p = .06$) and vigorous physical activity (MET VIG; $r = .38, p = .06$), but not moderate physical activity (MET MOD; $r = .13, p = .55$). The specialization category included years spent specializing in their respective sport. Inferential data can be found in Table 5.

Qualitative Data

Of the 26 that answered, 21 stated they experienced the feeling of burnout while they participated in their sport (yes: $n = 21$; no: $n = 5$). The most common burnout influences included: they felt overworked ($n = 7$), the coach ($n = 5$), time commitment ($n = 4$), and their sport was physically and emotionally draining ($n = 3$). There were 20 participants that answered yes ($n = 12$) or no ($n = 8$) that the feeling of burnout affected their exercise habits. One participant did not state whether or not the feeling of burnout affected their exercise habits. The

effect of burnout on physical activity habits were: does not affect exercise ($n = 8$), immediately affected exercise habits, but after some time improved ($n = 4$), no motivation ($n = 2$), didn't find much joy in exercise ($n = 1$), emotionally ($n = 1$), didn't want to exercise anymore ($n = 1$), don't exercise as much as before ($n = 1$), negative effects ($n = 1$), and didn't have the energy to do much ($n = 1$). There were several reasons listed participants chose to end their college career: injury ($n = 7$), eligibility ($n = 2$), no longer had desire to play ($n = 5$), and other ($n = 12$). Other answers provided were the coach, graduation, doctor medically retired the athlete, financial aid, Covid-19, and transferred.

Specialization, Motivation, and Burnout

A closer look into years spent in sport and its relationship between motivation or burnout did not show a relationship (SMS: $r = .02, p = .91$; exhaustion: $r = .06, p = .79$; reduced accomplishment: $r = -.33, p = .73$; devaluation: $r = .33, p = .12$). Years spent specializing in sport did not show a relationship with motivation or burnout (SMS: $r = -.01, p = .96$; exhaustion: $r = -.23, p = .27$; reduced accomplishment: $r = -.21, p = .32$; devaluation: $r = -.09, p = .66$). The length of time from ending their sport until completing the survey did not have a relationship with motivation or burnout (SMS: $r = .15, p = .50$; exhaustion: $r = -.23, p = .29$; reduced accomplishment: $r = -.07, p = .75$; devaluation: $r = -.12, p = .59$).

CHAPTER FIVE: DISCUSSION

The primary aim of this study was to examine the relationships between motivation, athlete burnout, and exercise habits in retired college athletes. There was no relationship between exercise habits and motivation or burnout in retired college athletes. Though there were no significant relationships between those three variables, meaningful data was collected which could indicate further research recommendations. The relationship between years of specialization in one sport and physical activity levels in retired college athletes did approach significance. The qualitative data in the survey gave interesting insight into different influences on burnout: coaches, overtraining, and emotional and physical exhaustion. This could also influence the future direction of this study.

Motivation and Exercise Habits

Motivation levels and exercise habits did not have a relationship with each other regardless of activity intensity. The lack of relationship means motivation does not correlate with physical activity levels. A closer look at values in Table 7, demonstrates that HEPA Active individuals ($M = 88.06$; $SD = 20.74$) averaged a higher score in the Sport Motivation Scale (SMS) survey than participants of lower activity levels. The higher SMS scores were more prevalent in HEPA Active individuals. While the inferential statistics did not demonstrate a significant relationship between the two, this trend could indicate individuals with more motivation tend to be more physically active. The increase in physical activity due to motivation may be fueled by the competitive nature most athletes possess. These results differ from another study that found nonathletes were more likely to meet the physical activity guidelines of 150 minutes of moderate to vigorous exercise compared to alumni student athletes (Sorenson et al., 2015). These non-collegiate athletes may have learned or established good exercise habits in

college because they were not a part of a collegiate team where a coach or schedule was dictating schedules. The nonathlete needed to establish that habit themselves. The alumni athletes may not have established their own exercise habits in the time the study was conducted which may have influenced the results of the study. The alumni athletes may have been transitioning to their new life of independent exercise and building those habits. The insignificance between motivation and exercise habits could indicate motivation does not play a major role in physical activity levels. Perhaps established exercise habits generate increased levels of physical activity with decreased levels of motivation. Established exercise habits could carry more weight than the motivation to exercise.

Burnout and Exercise Habits

There was no relationship between burnout and exercise habits. The lack of relationship between burnout and exercise habits may be because the participants had to think back to when they were playing sports. It was not specified whether the participant was experiencing burnout currently; they were asked if they had ever experienced burnout while they were playing sports. Comparing current exercise habits to past burnout experiences may have affected the relationship between exercise habits and burnout as the current level of burnout of the participant was not recorded. Burnout can continue to increase while playing sports. This means burnout can decrease after retirement from sports (Aunola et al., 2018), since retirement provides rest from sports. The participant may not have perceived that they had experienced burnout during their career due to the time spent away from playing. Future studies could observe the relationship between time spent in retirement and the exercise habits of athletes who experienced burnout. The participants who answered that they did not experience burnout could have also been thinking of their current state. To play a college sport, athletes must be enrolled in 12 credits of

classes as an undergraduate student or nine credits of classes as a graduate student. School adds stress to student athletes in college especially if they were experiencing burnout (Sorkkila et al., 2020). Participants would have been in school while filling out the survey because the email blast was sent to current UCO students, however they were not participating in sports.

Eliminating that stress decreases the feeling of burnout so that could have influenced the insignificance between exercise habits and burnout (Sorkkila et al., 2020). The current study did not show a relationship between burnout and exercise habits; however, future studies should observe the relationship between athletes experiencing burnout and their current exercise habits.

Specialization and Exercise Habits

After the two hypotheses were tested and the relationships were determined to be not significant, the researcher looked at the relationship between sports specialization and exercise habits. There was no relationship present between specialization and exercise habits; however, interesting data was collected. The relationship between years specializing in a sport and MET VIG was close to significance. Specializing in one sport is filled with intense schedules, practices, skill work, and games. Perhaps participants who were used to the stress and intensity of specializing in a sport were more likely to endure the stress and intensity of vigorous exercise. Their bodies were trained to endure through sports specialization which could have carried into vigorous physical activity habits. It may also be that individuals who participate in competitive collegiate athletics are more likely to enjoy and be more comfortable with participating in vigorous activities. An interesting component that future studies could observe would be the relationships between team versus individual sport specialization, exercise habits, and burnout. Team sport specialization decreases the likelihood of burnout compared to individual sport specialization (Aunola et al., 2018). Specialization eventually happens to most athletes in college

because one sport is played. In some cases, athletes are allowed to participate in two college sports. A lot of college coaches look for well-rounded athletes which includes playing multiple sports to round out athletic skills. Specialization is not always the best route for athletes if they are planning to play that specialized sport in college. Specialization in one sport caused concern for limited motor skill development, decreases in intrinsic motivation, heightened stress, and athlete burnout (Russell et al., 2018). Years spent specializing in a sport may have a close relationship with MET VIG; however, not enough evidence was present to make a strong conclusion. A closer look at specialization, motivation, and burnout is observed later in this study.

Qualitative Data

During this study, participants were asked if they experienced burnout while they were playing and to give the influence of that feeling of burnout. The most common influence of burnout stated was the coach. Some participants stated their coach to be a major reason why they experienced burnout or ended their career which is common in athletics. One participant explained that they faced poor treatment from the coach which made the entire experience miserable. Playing their sport turned into more of a job than their passion. The coach's influence on burnout was not surprising because they have a strong influence on athletes through their leadership style, motivation tactics, and affective responses (Keegan et al., 2009). One study did observe that coaches that stress important and inclusive roles via communication decreased the feeling of burnout (Into et al., 2020). Coaches were also a reason two participants gave for ending their collegiate sports careers. One of those participants experienced burnout because of their coach, but the other participant experienced burnout because there was no time to rest. Burnout carried over and influenced participants' exercise habits. Most responses were

emotional and subjective which connects with the feeling of burnout because it is a subjective feeling of the three constructs of burnout. Since burnout was a subjective and personal assessment made on the participant and not clinically diagnosed, this may have influenced all relationships observed with burnout in this study. Future studies could observe the relationship between burnout and coaching, but clinical burnout would be established during the study.

Specialization, Motivation, and Burnout

Burnout constructs and motivation were observed in the relationship between years in sport, years specializing in sport, and length since the sport was played. No significant relationships were observed between the variables which was also concluded in a study conducted by Russell et al. (2018) that athletic burnout and sport motivation were not affected by specialization status (Russell et al., 2018). Burnout was recorded as a previous experience and feeling, and years spent specializing in a sport could have been when the athlete was experiencing burnout. The timeframe should be more defined: the relationship between years specialization in sport without experiencing burnout and current feelings of burnout. This could be a future direction of this study. In the study conducted by Sorenson et al. (2015), current student athletes expressed the importance of exercising, but it was less prevalent in nonathletes and alumni athletes. During their college careers, athletes were directed by coaches and schedules on workouts. Athletes may not have been educated on exercising habits in life after sports. This could translate to the impression that burnout influenced their exercise habits, but it may be that they were not educated on physical activity habits. Future studies could observe current college athletes who are experiencing burnout but educate the athletes on physical activity habits in retirement after the research is conducted. Motivation may not have had a relationship with burnout in the current study, but burnout was linked to amotivation in a study

conducted by Cresswell et al. (2005b). During this study, there was some time between current motivation levels and when they experienced feelings of burnout. This could have influenced the insignificance in this relationship. It would be interesting to observe athletes who currently express the feeling of burnout and their motivation levels. Another direction this study could go would be comparing the motivation and burnout levels in current college athletes and seeing the differences in the length of time since they played later as retired athletes. Another interesting observation from the study by Anderson et al. (2006) was that older adults aged 65-74 were more likely to participate in vigorous activities than middle-aged and younger adults. Continuing this study could open the observation of relationships between younger, middle-aged, and older adults and their burnout, motivation, and physical activity levels.

Conclusions

Athletes have different experiences while playing their college sport which means they have different influences on their careers. Burnout is a common feeling that athletes can encounter while playing sports which is caused by various influences. Playing sports is full of physical activity, but it sometimes fails to translate into exercise habits once the athlete retires. Motivation is influenced intrinsically and extrinsically, and it can increase or decrease in as little as a day. Future research could observe the relationship between athletes presently experiencing burnout, their exercise habits, and motivation levels, then compare those same variables every year. This longitudinal approach could give better insight to what is causing burnout, influencing exercise habits, and how motivation affects these variables. If coaches are a common cause of burnout, they should modify their programs to allow for more rest, time management workshops, or attend coaching clinics to improve leadership skills. Athletic departments could bring in an exercise physiologist and psychologist to educate athletes on how to create exercise habits and

the physical activity guidelines when they retire college athletics. If an athlete is experiencing burnout, most colleges have counseling centers to help navigate the circumstances of what is causing their burnout. Overall, this study concluded that burnout, motivation, and exercise habits in retired college were not shown to be significant and examining sport specialization in relation to these three entities also proved to be insignificant.

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TABLES

Table 1

*Baseline Demographic Characteristics
of the Study Sample*

	<i>n</i>
Sex	
Male	7
Female	19
Ethnicity	
Hispanic	3
Non-Hispanic	23
Caucasian	17
Black or AA*	4
Other	3
Age (<i>M</i> = 18-24 years; <i>SD</i> = .33)	
18-24	23
25-34	3

**Note.* AA = African American

Table 2

Descriptive Statistics for Sports Participation and MET/min/wk⁻¹

	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
Total Years Played	25	16.12	3.98	3	21
Years Specialized	26	8.96	5.32	0	20
Total MET/min/wk ⁻¹	26	3952.44	3089.74	0	12,240
Vigorous MET/min/wk ⁻¹	26	2865.23	2125.84	0	7680
Moderate MET/min/wk ⁻¹	26	1193.33	1874.26	0	8400

**Note.* Inactive: no moderate or vigorous activity for at least five days and at least 600 MET minutes. Minimally Active: five days of 600 MET minutes of moderate and vigorous activity or moderate and vigorous intensity activity for less than seven days and less than 3000 MET minutes. HEPA Active: three or more days of vigorous activity for at 1500 MET minutes or moderate and vigorous activity for seven days and more than 3000 MET minutes.

Table 3

Frequency of College Career & Retirement by Activity Level

	<i>Total Sample</i>	<i>Inactive</i>	<i>Minimally Active</i>	<i>HEPA Active</i>
<i>Academic End Year</i>				
Freshman	4	0	1	3
Sophomore	6	1	2	3
Junior	5	0	1	3
Senior	11	1	2	8
<i>Reason for Ending</i>				
Injury	7	0	1	6
Eligibility	2	0	2	0
No desire to play	5	0	2	3
Other	12	2	1	8
<i>Sport Played in College</i>				
Softball	7	0	0	7
Rowing	4	0	1	3
Soccer	4	0	2	2
Pom/Dance	1	0	1	0
Football	3	1	0	2
Wrestling	1	0	0	1
Volleyball	3	0	2	0
Track	1	0	0	1
Baseball	2	1	0	1

**Note.* Inactive: no moderate or vigorous activity for at least five days and at least 600 MET minutes. Minimally Active: five days of 600 MET minutes of moderate and vigorous activity or moderate and vigorous intensity activity for less than seven days and less than 3000 MET minutes. HEPA Active: three or more days of vigorous activity for at 1500 MET minutes or moderate and vigorous activity for seven days and more than 3000 MET minutes.

Table 4

Frequency of Sports Participation & PA by Activity Category

<i>Years Played</i>	<i>Total Sample</i>	<i>Inactive</i>	<i>Minimally Active</i>	<i>HEPA Active</i>
<i>College</i>				
1 year	6	0	2	3
2 years	7	1	1	5
3 years	3	0	1	2
4 years	7	0	2	5
5 years	3	0	0	2
<i>Youth</i>				
3-9 years	1	0	0	1
10-15 years	6	1	3	3
16-21 years	15	1	3	12

Table 5

Relationship between Motivation, Burnout, Specialization, & Physical Activity

<i>Variable</i>	<i>MET Total</i>			<i>MET Moderate</i>			<i>MET Vigorous</i>		
	<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>	<i>r</i>	<i>p</i>
Exhaustion	25	.07	.73	25	-.29	.16	25	.25	.22
Reduced Accomplishment	26	-.13	.54	26	-.31	.13	25	.02	.94
Devaluation	26	.05	.82	26	-.19	.33	25	.15	.49
Years in Sport	24	.14	.53	24	-.22	.31	24	.28	.18
Years Specialization	25	.38	.06	25	.13	.55	25	.38	.06
Length Since Played	22	.35	.11	22	.31	.16	22	.25	.26
SMS Totals	25	.79	-.06	25	.87	-.03	25	.82	-.05

**Note.* SMS = Sport Motivation Scale

Table 6

Relationship between Motivation, Burnout, & Sports Specialization

<i>Variable</i>	<i>Years In Sport</i>			<i>Years Specializing</i>			<i>Length Since Played</i>		
	<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>	<i>r</i>	<i>p</i>
Exhaustion	24	-.06	.79	25	-.23	.27	22	-.23	.29
Reduced Accomplishment	24	-.07	.73	25	-.21	.32	22	-.07	.75
Devaluation	24	-.33	.12	25	-.09	.66	22	-.12	.59
SMS Totals	24	.02	.91	25	-.01	.96	22	.15	.50

**Note.* SMS = Sport Motivation Scale

Table 7

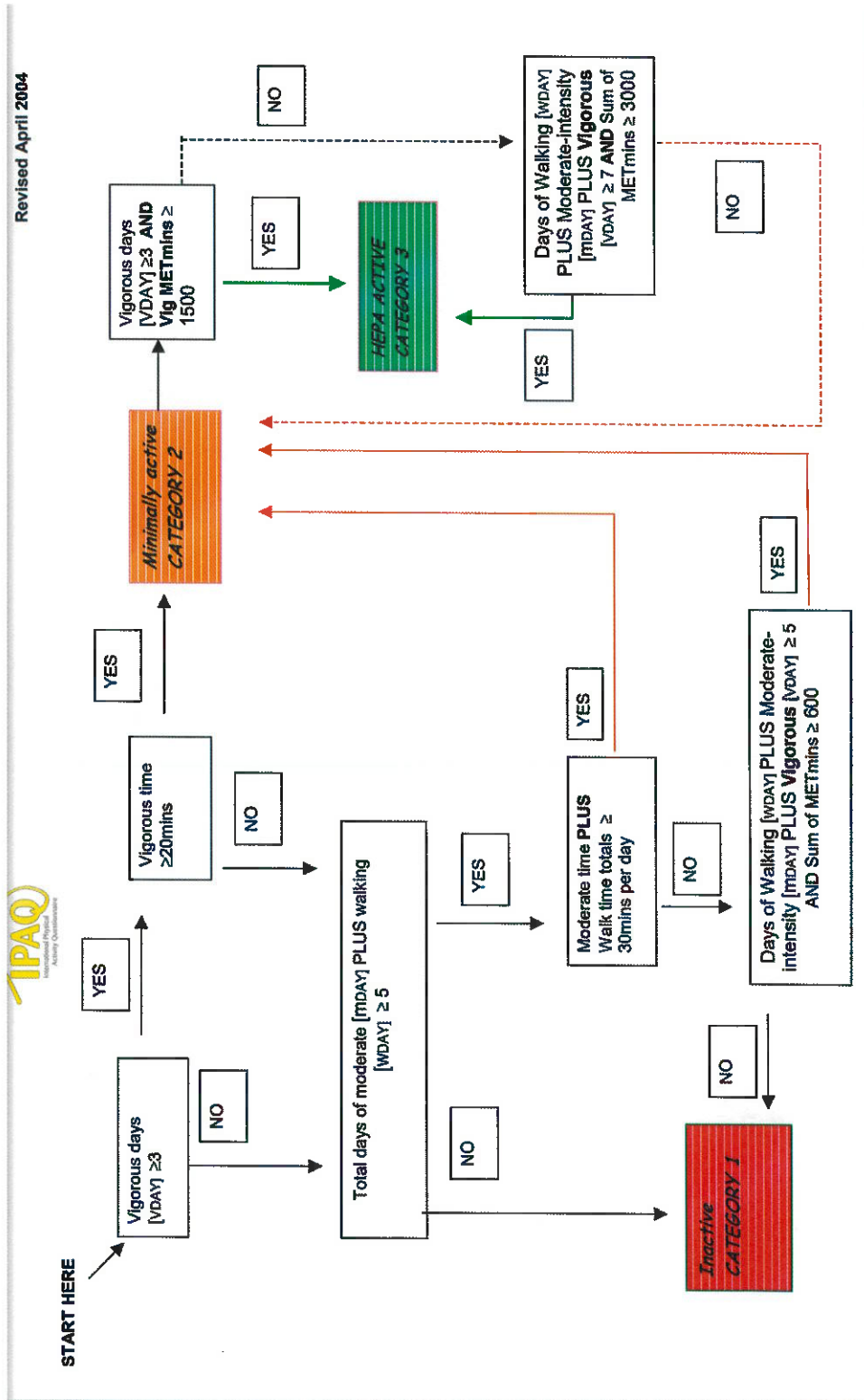
Descriptive Statistics for Motivation and Burnout

	<i>Total Sample</i>	<i>Mean</i>	<i>Std. Deviation</i>
SMS Totals			
Inactive	2	58.00	24.04
Somewhat Active	6	87.67	18.63
HEPA Active	17	88.06	20.74
ABQ Exhaustion			
Inactive	2	26.50	16.26
Somewhat Active	6	31.33	9.89
HEPA Active	17	31.65	9.62
ABQ Reduced Accomplishment			
Inactive	2	13.00	4.24
Somewhat Active	6	14.17	3.55
HEPA Active	17	14.18	4.13
ABQ Sport Devaluation			
Inactive	2	13.50	10.61
Somewhat Active	6	13.00	6.57
HEPA Active	17	11.82	5.25

**Note.* SMS = Sport Motivation Scale; Inactive: no moderate or vigorous activity for at least five days and at least 600 MET minutes. Minimally Active: five days of 600 MET minutes of moderate and vigorous activity or moderate and vigorous intensity activity for less than seven days and less than 3000 MET minutes. HEPA Active: three or more days of vigorous activity for at 1500 MET minutes or moderate and vigorous activity for seven days and more than 3000 MET minutes.

FIGURES

Figure 1
IPAQ-SF Diagram



APPENDICES

Appendix A

Informed Consent Form

UNIVERSITY OF CENTRAL OKLAHOMA
INFORMED CONSENT FORM

This is a template including all of the necessary elements of an Informed Consent Form. It is not necessary to use this form. In some cases, you may need another format, i.e. an online survey, a participant letter, etc. See Informed Consent Guidelines on our website for more information.

Research Project Title: The Relationship between Burnout, Motivation, and Exercise Habits in Retired College Athletes

Researcher (s): Jenna Hering

- A. **Purpose of this research:** The purpose of this research is to examine the relationships between burnout, motivation, and exercise habits in retired college athletes.
- B. **Procedures/treatments involved** Participants will be asked to fill out online the Athlete Burnout Questionnaire (ABQ), the International Physical Activity Questionnaire – Short Form (IPAQ-SF), the Sport Motivation Scale (SMS), and a demographic questionnaire one single time. Once that data has been collected, a Pearson's Product Moment Correlation will analyze the relationship between the following variables: motivation, burnout, and activity level. Should any correlations be significant, a multiple regression analysis will be used to determine if significant variables are also significant predictors of activity level among retired collegiate athletes.
- C. **Expected length of participation:** Participants will be asked to fill out the survey one time. They will be invited to attend an educational session on ways to increase their motivation and improve their physical activity levels following completion of the study.
- D. **Potential benefits:** Potential benefits of this research are seeing if correlations in burnout and motivation predict exercise habits in retired athletes which in turn can bring awareness to that individual. This may cause their physical activity levels to increase.
- E. **Potential risks or discomforts:** There are no potential risks or discomforts.
- F. **Medical/mental health contact information (if required):** N/A
- G. **Contact information for researchers:** email: jhering@uco.edu
- H. **Contact information for UCO IRB:**
- I. **Explanation of confidentiality and privacy:**
- J. **Assurance of voluntary participation:**

AFFIRMATION BY RESEARCH SUBJECT

I hereby voluntarily agree to participate in the above listed research project and further understand the above listed explanations and descriptions of the research project. I also understand that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty. I acknowledge that I am at least 18 years old. I have read and fully understand

this Informed Consent Form. I sign it freely and voluntarily. I acknowledge that a copy of this

Informed Consent Form has been given to me to keep.

Research Subject's Name: _____

Signature:

Date: _____

Appendix B

Athlete Burnout Questionnaire

Answer each question on a scale of 1-5 (1 = almost never; 5 = most of the time)

Exhaustion

1. I feel that my batteries are flat
2. I feel exasperated
3. I lack energy
4. I feel wearied
5. I feel physically drained
6. I feel frazzled
7. I feel physically exhausted
8. I hardly think quickly
9. I feel physically weak
10. I find it hard to concentrate

Reduced Sense of Accomplishment

11. I am not performing up to my abilities
12. I am unable to achieve good performances
13. I feel incompetent
14. I feel successful
15. It seems to me that whatever I do, I'm failing

Sport Devaluation

16. Efforts I provide would be better used doing something else
17. My performances leave me indifferent
18. I not really care about my performances
19. I have negative feelings toward my sport
20. I feel loathing toward my sport

Appendix C
Sport Motivation Scale

The Sport Motivation Scale

Instructions: Please use this list of sentences to describe why you practice in sports. There is no right or wrong answer.

Please choose the number that best describes you.

1 Does not corresponds at all

2 Corresponds a little

3 Corresponds moderately

4 Corresponds a lot

5 Corresponds exactly

1. For the pleasure I feel in living exciting experiences.

1-----2-----3-----4-----5

2. For the pleasure it gives me to know more about the sport that I practice.

1-----2-----3-----4-----5

3. I used to have good reasons for doing sport, but now I am asking myself if I should continue doing it.

1-----2-----3-----4-----5

4. For the pleasure of discovering new training techniques.

1-----2-----3-----4-----5

5. I don't know anymore; I have the impression of being incapable of succeeding in this sport.

1-----2-----3-----4-----5

6. Because it allows me to be well regarded by people that I know.

1-----2-----3-----4-----5

7. Because, in my opinion, it is one of the best ways to meet people.

1-----2-----3-----4-----5

8. Because I feel a lot of personal satisfaction while mastering certain difficult training techniques.

1-----2-----3-----4-----5

9. Because it is absolutely necessary to do sports if one wants to be in shape.

1-----2-----3-----4-----5

10. For the prestige of being an athlete.

1-----2-----3-----4-----5

11. Because it is one of the best ways I have chosen to develop other aspects of myself.

1-----2-----3-----4-----5

12. For the pleasure I feel while improving some of my weak points.

1-----2-----3-----4-----5

13. For the excitement I feel when I am really involved in the activity.

1-----2-----3-----4-----5

14. Because I must do sports to feel good myself.

1-----2-----3-----4-----5

15. For the satisfaction I experience while I am perfecting my abilities.

1-----2-----3-----4-----5

16. Because people around me think it is important to be in shape.

1-----2-----3-----4-----5

17. Because it is a good way to learn lots of things which could be useful to me in other areas of my life.

1-----2-----3-----4-----5

18. For the intense emotions I feel doing a sport that I like.

1-----2-----3-----4-----5

19. It is not clear to me anymore; I don't really think my place is in sport.

1-----2-----3-----4-----5

20. For the pleasure that I feel while executing certain difficult movements.

1-----2-----3-----4-----5

21. Because I would feel bad if I was not taking time to do it.

1-----2-----3-----4-----5

22. To show others how good I am good at my sport.

1-----2-----3-----4-----5

23. For the pleasure that I feel while learning training techniques that I have never tried before.

1-----2-----3-----4-----5

24. Because it is one of the best ways to maintain good relationships with my friends.

1-----2-----3-----4-----5

25. Because I like the feeling of being totally immersed in the activity.

1-----2-----3-----4-----5

26. Because I must do sports regularly.

1-----2-----3-----4-----5

27. For the pleasure of discovering new performance strategies.

1-----2-----3-----4-----5

28. I often ask myself; I can't seem to achieve the goals that I set for myself.

1-----2-----3-----4-----5

Scoring:

Intrinsic motivation - to know = Question # 2, 4, 23, 27

Intrinsic motivation - to accomplish= Question # 8, 12, 15, 20

Intrinsic motivation - to experience stimulation= Question # 1, 13, 18, 25

Extrinsic motivation - identified= Question # 7, 11, 17, 24

Extrinsic motivation – introjected= Question # 9, 14, 21, 26

Extrinsic motivation - external regulation= Question # 6, 10, 16, 22

Amotivation= Question # 3, 5, 19, 28

Enter your ratings for each numbered question in the category where it appears.

Add the ratings for each category to obtain a total for that specific fact.

Intrinsic motivation – to know

2 _____

4 _____

27 _____

23 _____

Total:

Intrinsic motivation – to accomplish

8 _____

12 _____

15 _____

20 _____

Total Grading:

Intrinsic motivation – to experience stimulation

1 _____

3 _____

18 _____

25 _____

Total :

Extrinsic motivation - identified

7 _____

11 _____

17 _____

24 _____

Total Guidance:

Extrinsic motivation – introjected

9 _____

14 _____

21 _____

26 _____

Total:

Extrinsic motivation - external regulation

6 _____

10 _____

16 _____

22 _____

Total:

Amotivation

3 _____

15 _____

19 _____

28 _____

Total

Appendix D

International Physical Activity Questionnaire – Short Form

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRES

This is the final SHORT LAST 7 DAYS SELF-ADMINISTERED version of IPAQ from the 2000/01 Reliability and Validity Study. Completed May 2001.

IPAQ: SHORT LAST 7 DAYS SELF-ADMINISTERED FORMAT
FOR USE WITH YOUNG AND MIDDLE-AGED ADULTS

The International Physical Activity Questionnaires (IPAQ) comprises a set of 4 questionnaires.
Long

(5 activity domains asked independently) and short (4 generic items) versions for use by either telephone or self-administered methods are available. The purpose of the questionnaires is to provide common instruments that can be used to obtain internationally comparable data on healthrelated physical activity.

Background on IPAQ

The development of an international measure for physical activity commenced in Geneva in 1998 and was followed by extensive reliability and validity testing undertaken in 12 countries (14 sites) across 6 continents during 2000. The final results suggest that these measures have acceptable measurement properties for use in many settings and in different languages. IPAQ is suitable for use in regional, national and international monitoring and surveillance systems and for use in research projects and public health program planning and evaluation. International collaboration on IPAQ is on-going and an international prevalence study is under development.

Using IPAQ

Worldwide use of the IPAQ instruments for monitoring and research purposes is encouraged.

It is strongly recommended, to ensure data quality and comparability and to facilitate the development of an international database on health-related physical activity, that no changes be made to the order or wording of the questions as this will affect the psychometric properties of the instruments, if additional questions on physical activity are needed they should follow the IPAQ items, translations are undertaken using the prescribed back translation methods (see website) new translated versions of IPAQ be made available to others via the web site to avoid duplication of effort and different versions in the same language, a copy of IPAQ data from representative samples at national, state or regional level be provided to the IPAQ data storage center for future collaborative use (with permission) by those who contribute.

More Information

Two scientific publications presenting the methods and the pooled results from the IPAQ reliability and validity study are due out in 2002.

More detailed information on the IPAQ process, the research methods used in the development of the IPAQ instruments, the use of IPAQ, the published papers and abstracts and the on-going international collaboration is available on the IPAQ web-site. www.ipaq.ki.se

This is the final SHORT LAST 7 DAYS SELF-ADMINISTERED version of IPAQ from the 2000/01 Reliability and Validity Study. Completed May 2001.

2

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE
IPAQ: SHORT LAST 7 DAYS SELF-ADMINISTERED FORMAT
FOR USE WITH YOUNG AND MIDDLE-AGED ADULTS

NOTE: EXAMPLES OF ACTIVITIES MAY BE REPLACED BY CULTURALLY
RELEVANT

EXAMPLES WITH THE SAME METS VALUES (SEE AINSWORTH ET AL., 2000).

This is the final SHORT LAST 7 DAYS SELF-ADMINISTERED version of IPAQ from the 2000/01 Reliability and Validity Study. Completed May 2001.

3

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. This is part of a large study being conducted in many countries around the world. Your answers will help us to understand how active we are compared with people in other countries. The questions are about the time you spent being physically active in the last 7 days. They include questions about activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Your answers are important.

Please answer each question even if you do not consider yourself to be an active person.

THANK YOU FOR PARTICIPATING.

In answering the following questions,

“ vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal.

“ moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal.

This is the final SHORT LAST 7 DAYS SELF-ADMINISTERED version of IPAQ from the 2000/01 Reliability and Validity Study. Completed May 2001.

4

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

Think about only those physical activities that you did for at least 10 minutes at a time.

_____ days per week or none

1b. How much time in total did you usually spend on one of those days doing vigorous physical activities?

_____ hours _____ minutes

2a. Again, think only about those physical activities that you did for at least 10 minutes at a time. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ days per week or none

2b. How much time in total did you usually spend on one of those days doing moderate physical activities?

_____ hours _____ minutes

3a. During the last 7 days, on how many days did you walk for at least 10 minutes at a time? This includes walking at work and at home, walking to travel from place to place, and any other walking that you did solely for recreation, sport, exercise or leisure.

_____ days per week or none

3b. How much time in total did you usually spend walking on one of those days?

_____ hours _____ minutes

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

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

_____ hours _____ minutes

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

Appendix E
Demographic Questionnaire

Demographic Questionnaire

Definitions:

Burnout: the feeling of physical or emotional exhaustion, devaluation in sport, and reduced athletic accomplishment.

Specializing in a sport: intense, year-round training in one sport with the exclusion of other sports.

Exercise habits: the level of activity with a specific purpose that improves or sustains fitness and health.

Age: _____

Sex: _____M _____F

Race (Check all that apply):

_____ African American _____ Hispanic _____ American Indian
 _____ Asian _____ Caucasian _____ Native Hawaiian _____ Other

1. What sport(s) did you play growing up?

2. How many years have you been playing sports? _____

3. How many year(s) did you spend specializing in a sport? _____

4. What sport(s) did you specialize in?

5. What sport did you play in college? _____

6. How long did you play that sport in college? _____

7. What academic year did you end your sport? (Freshman, Sophomore, etc.)

8. What was the reason for ending your sport? (Eligibility, injury, etc.)

9. How long has it been since you last played your sport? _____

10. Did you ever experience burnout while playing your sport? If no, stop here. If yes, please answer questions 11 and 12. _____

11. If yes, what influenced that feeling of burnout?

12. Does your feeling of burnout influence your exercise habits? If so, how?
