

Effectiveness and Causal Mechanisms for a ‘Life after Sport’ Career Development
Intervention with Collegiate Student-Athletes

A Dissertation

Presented in Partial Fulfillment of the Requirements for the
Degree of Doctorate of Philosophy

with a

Major in Education

in the

College of Graduate Studies

University of Idaho

by

Matt B. Vaartstra

Major Professor: Damon Burton, Ph.D.

Committee Members: Tony Pickering, Ph.D.; Alan Nasypany, Ed.D.; Brian Hopper, Psy.D.

Department Administrator: Philip Scruggs, Ph.D.

December 2015

Authorization to Submit Dissertation

This dissertation of Matt Vaartstra, submitted for the degree of Doctorate of Philosophy with a Major in Education and titled "**Effectiveness and Causal Mechanisms for a 'Life after Sport' Career Development Intervention with Collegiate Student-Athletes,**" has been reviewed in final form. Permission, as indicated by the signatures and dates below, is now granted to submit final copies to the College of Graduate Studies for approval.

Major Professor: _____ Date: _____

Damon Burton, Ph.D.

Committee Members: _____ Date: _____

Brian Hopper, Psy.D.

_____ Date: _____

Alan Nasypany, Ed.D.

_____ Date: _____

Tony Pickering, Ph.D.

Department

Administrator: _____ Date: _____

Philip Scruggs, Ph.D.

Abstract

This dissertation is comprised of two studies based on data collected from NCAA Division I student-athletes comparing treatment and intervention groups during a 9-week career development intervention. Study 1 examined intervention effectiveness comparing psychosocial and behavioral outcomes over time, and Study 2 investigated why the intervention was effective by examining psychosocial and contextual factors as potential mediators and/or moderators of the relationship between the intervention and behavioral outcomes. Repeated-measures analysis of variance results from Study 1 indicated that the career development intervention significantly enhanced career decision-making self-efficacy, positive emotions, identified regulation, integrated regulation, self-reported career development behaviors, and stage of change; and significantly decreased amotivation towards career development. Results from Study 2 indicated that career decision-making self-efficacy, identified regulation, and integrated regulation significantly mediated the relationship between the intervention and several of the targeted psychosocial and behavioral outcomes. Intervention engagement was found to be a significant moderator of the relationship between the intervention and several targeted behavioral outcomes. The discussion focuses on the impact of the career development intervention on student-athletes and identifying the psychosocial and contextual factors that are critical to the effectiveness of the intervention. Suggestions are made for maximizing the effectiveness career development interventions targeted towards student-athletes and potential directions for future research on student-athlete career development interventions.

Acknowledgements

This dissertation would not have been possible without the assistance of many people along the way. Dr. Damon Burton was instrumental in his support from the time I was an undergraduate assistant all the way to supervising this project. I would like to thank my committee of Dr. Tony Pickering, Dr. Alan Nasypany, and Dr. Brian Hopper for all their feedback and support throughout this dissertation.

Additionally, this study would not have been possible without the support of Dr. Susan Steele in the Athletics Department and the entire staff of the University of Idaho Career Center. I would also like to thank all of the student-athlete participants for volunteering their time to be a part of the study. Specifically, the time and attention spent by all the intervention participants was critical to the success of this project.

Dedication

This work is dedicated to my wife, Elyse Vaartstra, without her support, love, and dedication this project would not have been a success. To my parents (Brian and Bev) and family (Brent, Emily, Geoff, and Luke) whose support, encouragement, and humor kept me striving for my goals.

Table of Contents

Authorization to Submit Dissertation	ii
Abstract	iii
Acknowledgments	iv
Dedication.....	v
Table of Contents	vi
List of Tables	viii
List of Figures	ix
Study 1: Planning Ahead: Examining the Effects of a Career Development Intervention on Student-Athletes’ Psychosocial and Behavioral Outcomes.....	1
The Working Model of Athlete Career Development.....	2
Method.....	12
Results.....	20
Discussion.....	22
Limitations.....	28
Implications and Future Research.....	28
References.....	30
Study 2: Why Career Development Interventions Work: How Psychosocial Mediators and Contextual Moderators Impact Intervention Outcomes.....	41
Working Model of Athlete Career Development.....	42
Method.....	48
Results.....	56
Discussion.....	59

Limitations.....	65
Implications and Future Research.....	65
References.....	66
Appendix 1. IRB Protocol Approval.....	79
Appendix 2. Student-Athlete Informed Consent.....	80
Appendix 3. Career Development Behaviors Survey (CDBS).....	81
Appendix 4. Sport Motivation Scale-6-Career Development (SMS-6-CD).....	82
Appendix 5. Career Decision-Making Self-Efficacy-Short Form (CDMSE-SF).....	83
Appendix 6. Athlete Identity Measurement Survey (AIMS).....	84
Appendix 7. Change Event Inventory (CEI).....	85
Appendix 8. Life After Sport Survey (LASS).....	87
Appendix 9. Collegiate Athlete Life after Sport Demographic Questionnaire (CALSDQ)....	90
Appendix 10. Career Development Intervention Effectiveness Survey (CDIES).....	91
Appendix 11. Unabridged Literature Review.....	92

List of Tables

Study 1

Table 1. Intervention Session Description Table..... 39

Table 2. Composite Treatment and Control Groups Means and Standard Deviations for Pre- and Post-Intervention Assessments of Career Decision-Making Self-Efficacy, Positive and Negative Emotion, Motivation Subscales, Coping, Career Behaviors, and SOC..... 40

Study 2

Table 1. Means, Standard Deviations, and Bivariate Correlations among all Psychosocial, Contextual, and Behavioral Variables at Post-Intervention..... 73

Table 2. Mediation Results for Career Decision-Making Self-Efficacy's Influence on the Relationship between the Career Development Intervention and the Psychosocial/Behavioral Outcomes..... 74

Table 3. Mediation Results for Integrated Regulation's Influence on the Relationship between the Career Development Intervention and the Psychosocial/Behavioral Outcomes..... 75

Table 4. Mediation Results for Identified Regulation's Influence on the Relationship between the Career Development Intervention and the Psychosocial/Behavioral Outcomes..... 76

Table 5. Low and High Engagement Group Means, Standard Deviations, and Repeated Measures Analysis of Variance Results for Pre- and Post-Intervention Assessments of Intrinsic Motivation and External Regulation..... 77

Table 6. Self-Determined Motivation Cluster Profiles Means, Standard Deviations, and Repeated Measures Analysis of Variance Results for Pre- and Post-Intervention Assessments Career Decision-Making Self-Efficacy, Three Behavioral Variables, and Negative Emotions..... 78

List of Figures

Study 1

Figure 1. Working Model of Athlete Career Development..... 36

Figure 2. Interaction Effect Graphs (Time X Group) for Targeted Outcome Variables..... 37

Study 2

Figure 1. Working Model of Athlete Career Development..... 70

Figure 2. Example to Promote Understanding of How Mediation Analysis Is Conducted.... 71

Figure 3. Two-Cluster Profiles of Self-Determined Motivation Subscales at Pre-Test

Assessment..... 72

Study 1

Planning Ahead: Examining the Effects of a Career Development Intervention on Student-Athletes' Psychosocial and Behavioral Outcomes

Research (e.g., Burns, Jasinski, Dunn, & Fletcher, 2013; Stambulova, Alfermann, Statler, & Cote, 2009; Wylleman, Alfermann, & Lavallee, 2004) indicates that increased confidence in career planning skills has been found to improve athletes' cognitions, emotions, and ability to transition out of sport. Furthermore, Samuel and Tenenbaum (2013) found that athletes experiencing career change-events typically consulted with others and relied on the availability of professional support. However, student-athletes may not think about or find support for dealing with life after sport because their identity is so tied up in being an athlete that they do not recognize the need to plan for their future career (Navarro, 2013; Stoltenburg, Kamphoff, & Lindstrom-Bremer, 2011; Van Raalte & Andersen, 2007).

Recently, intervention strategies for assisting athletes transitioning out of sport have been suggested for both sport psychology consultants (Samuel & Tenenbaum, 2011b) and academic support services professionals (Burns et al., 2013). Moreover, Wylleman and colleagues (2004) suggest that intervention strategies are shifting from therapeutic approaches to athlete life-skills programs that provide support and education to enhance performers ability to plan for and then deal with post-sport career decisions. Although intervention strategies are being suggested, few studies have examined the effects of an intervention program that combines both sport psychology (SP) and career development (CD) approaches, creating a major gap in the empirical literature. The two research questions being examined in this study include: (a) Will participating in a career development intervention demonstrate more positive psychosocial and behavioral outcomes compared to a control group? and (b)

Will a career development intervention targeted specifically towards student-athletes be viewed as user-friendly and effective by the participants?

Working Model of Athlete Career Development

This intervention study was guided by a Working Model of Athlete Career Development (WMACD; see Figure 1). This WMACD conceptualizes that a career development intervention (i.e., education and training in career exploration, resume and cover letter building, self-marketing, networking, job searching, interview skills, and development of appropriate mental training tools and skills) will result in improvements to several different psychosocial (i.e., self-efficacy, self-determined motivation, change-event coping, and increased positive and decreased negative emotions about life after sport) and behavioral (i.e., engagement in career development behaviors, stage of change, and completion of take-home career development tasks) outcomes.

The primary overall hypothesis of the WMACD is that the treatment group will experience significantly better psychosocial and behavioral outcomes compared to the control group. Specifically, participation in the career development intervention should enhance key career development skills, leading to (H1) enhanced career decision-making self-efficacy, (H2) increased intrinsic motivation for career development, (H3) improved change-event coping skills, (H4) increased positive and (H5) decreased negative emotions, (H6) greater engagement in career development behaviors, (H7) further progression through stages of change for career behaviors, and (H8) greater completion of take-home career development tasks. A secondary issue is whether the intervention can be short, focused, and relevant enough to get athletes to use it.

Career Development Intervention Strategies

Career interventions for undergraduate student populations typically range from a full semester (i.e., approximately 15 weeks: Reese & Miller, 2006) to one-time interventions completed in a single short session (Foss & Slaney, 1986). Komarraju, Swanson, and Nadler (2014) found that an intervention that focused on strengths, self-reflection, and problem solving skills was effective in increasing career self-efficacy in a sample of undergraduate psychology students. Specifically, their intervention promoted self-confidence in career decision-making skills by having students (a) assess their own interests and abilities, (b) gain knowledge about careers in their field, (c) effectively plan their career path, (d) select options that were relevant to their goals, and (e) understand how to overcome frustrations and barriers they may encounter in pursuing their careers. Furthermore, students who felt more confident in career decision-making skills demonstrated increased intrinsic motivation toward their own career development and academic plans.

Career development tools and strategies. In a meta-analysis of the career intervention literature, Brown and colleagues (2003) examined the effectiveness of different career intervention strategies. The strategies they evaluated were based on the work of Brown and Ryan-Krane (2000) and Ryan (1999) which identified five critical components of an effective career intervention: (a) workbooks and written exercises, (b) individualized interpretations and feedback, (c) in-session occupational information exploration, (d) modeling, and (e) attention to building a support system. Brown and colleagues (2003) specified that effective career interventions focus on the following intervention strategies: (a) helping clients develop written goals for their future, post-intervention career work that are accompanied by reasonable implementation intentions and individualized counselor input; (b)

providing clients with in-session opportunities to gather and process occupational information; (c) promoting the search for, and use of, occupational information outside of sessions; (d) providing opportunities to compare, in writing, occupations or fields of interest and to consider the support that is available for different options; (e) offering individual consultations for problematic assessment results; and (f) identifying models who have successfully coped with career exploration and decision-making difficulties.

Wylleman and colleagues (2004) emphasized that interventions for athletes dealing with retirement from sport have shifted from therapeutic interventions to career development and life skills interventions. They identified the current strategies being used in athlete career interventions as the following: (a) values and interest exploration, (b) career awareness and decision-making, (c) CV/resume preparation, (d) interview techniques, (e) job search strategies, (f) career counseling, and (g) the development of generic social and interpersonal skills. Furthermore, Wylleman and colleagues (2004) suggested the need to examine the effectiveness of career interventions for athletes and assess the user-friendliness of these interventions.

Sport psychology tools and strategies. Goal setting is a common topic for many career development interventions (Fouad, Cotter, & Kantamneni, 2006). Fouad and colleagues (2006) applied the concept of self-efficacy to create an intervention that used Bandura's (1977) four sources of self-efficacy information (i.e., performance accomplishments, vicarious learning, verbal persuasion, and arousal control) to improve career decision-making self-efficacy in 73 undergraduate students enrolled in a career exploration course, with goal setting as the major tool to enhance performance accomplishments. Students who completed the course perceived decreased career decision-

making difficulties and increase career decision-making self-efficacy (Fouad et al., 2006).

Prehar and Ignelzi (2012) identified (a) self-assessment, (b) career exploration, (c) experience, and (d) plan implementation as the steps to successful career development which also centers on setting career goals and implementing a career plan to achieve them. Additionally, Burton and Raedeke (2008) suggest that relaxation, self-talk, motivation, self-confidence, and stress management are all important tools and skills for enhancing performance. Each of these mental tools and skills can be applied to the domain of career development to enhance student-athlete career development performance.

Career Development Intervention Outcomes

Outcomes for career development interventions that can be found in the CD research literature are primarily psychosocial outcomes such as career decision-making self-efficacy (Gaudron, 2011). This study sought to expand the research by also examining the behavioral outcomes of a career development intervention as specified by the WMACD.

Psychosocial outcomes. The WMACD predicted that several psychosocial outcomes would be impacted by this career development intervention. Specifically, positive emotions, career decision-making self-efficacy, self-determined motivation, and coping would increase as a result of the intervention. Conversely, negative emotions were predicted to decrease for treatment compared to control participants.

Career decision-making self-efficacy. A majority of research on career decision-making has focused on self-efficacy (see Gaudron, 2011). Bandura (1977, 1986) described self-efficacy as individuals' beliefs concerning their ability to successfully perform a given task or behavior, and he considered self-efficacy to be a major antecedent of behavior and behavior change, particularly from a clinical perspective. Based on self-efficacy theory,

individuals with low self-efficacy should avoid that task, whereas their counterparts with high task self-efficacy should be motivated to engage in the task. Hence, if the goal is to get someone to complete a task, increasing their task-specific efficacy expectations should make task completion more likely. Moreover, Bandura (1977) proposed four sources of information that influence self-efficacy expectations and can be used to modify self-efficacy beliefs, including: performance accomplishments, vicarious learning experiences, verbal persuasion, and arousal control. Therefore, by improving these four sources of information, self-efficacy about performing a task or behavior could be increased. Betz and Hackett (1981) were the first researchers to bring Bandura's concept of self-efficacy into the domain of career development, and their research has resulted in many career self-efficacy studies over the last three decades.

Taylor and Betz (1983) developed the first inventory (i.e., Career Decision-Making Self-Efficacy Scale; CDMSES) used to measure career decision-making self-efficacy, and the CDMSES has become the most widely used measure of career decision-making self-efficacy in the research literature (see Gaudron, 2011). High levels of career decision-making self-efficacy have been linked to lower career indecision (Betz, Klein, & Taylor, 1996; Betz & Serling, 1995; Taylor & Betz, 1983), improved career certainty (Betz et al., 1996; Betz & Serling, 1995), increased vocational identity (Betz et al., 1996), lower fear of commitment (Betz & Serling, 1995), increased career motivation (Komarraju et al., 2014), greater career maturity (Luzzo, 1995), enhanced satisfaction with academic major selection (Komarraju et al., 2014) and increased career exploration (Betz & Serling, 1995). Furthermore, career interventions have been shown to consistently increase career decision-making self-efficacy (see Betz & Luzzo, 1996 for a brief review). This study's first hypothesis predicts that the

intervention should significantly enhance career decision-making self-efficacy for the treatment compared to the control group.

Intrinsic motivation. Self-Determination Theory (SDT) was first proposed by Deci and Ryan (1985) as a way to understand intrinsic versus extrinsic motivation. SDT posits that people are innately and proactively motivated to master their social environment. The focus of SDT is on creating conditions that enhance an individual's innate need to successfully engage in their environment (Ryan & Deci, 2000). Deci and Ryan (1985) suggested that satisfaction of three psychological needs (i.e., competence, autonomy, and relatedness) increases intrinsic motivation for a task. Furthermore, they proposed that self-determination occurred on a continuum from amotivation (i.e., no motivation at all) to intrinsic motivation (i.e., motivated by purely internal reasons without external influence). The greater the satisfaction of the needs, the more self-determined motivation would become, moving from amotivation through extrinsic motivation to intrinsic motivation (Deci & Ryan, 1985). Extensive support for self-determination theory can be found throughout the motivation literature in numerous domains (see Deci & Ryan, 2002 for a review).

Research has shown that individuals with high levels of self-determined motivation perform better (Amiot, Gaudreau, & Blanchard, 2004), engage in more positive coping strategies in stressful situations (Amiot et al., 2004), and invest more effort in activities (Pelletier, Fortier, Vallerand, Tuson, Brière, & Blais, 1995) than do their more extrinsically or amotivated counterparts. Additionally, in a pre-post-test study utilizing 226 undergraduate participants, Komarraju and colleagues (2014) found that students who were more confident about obtaining career-relevant information and solving career-related problems were more intrinsically motivated. They also identified career decision-making self-efficacy as a

predictor of self-determined motivation ($\beta = .171$, $t(223) = 2.54$, $p = .012$), although that relationship was mediated by perceived gain in knowledge about career information.

Although intrinsic motivation has been examined minimally as a CD intervention outcome with student-athlete populations, Hypothesis 2 (H2) predicts the career development intervention should improve levels of self-determined forms of extrinsic motivation and intrinsic motivation more and amotivation less for treatment compared to control participants.

Change-event coping. Alfermann, Stambulova, and Zamaityte (2004) found that athletes who engage in adaptive career planning had better and more positive transitions to life after sport. The transition to life after sport is a complex process for most athletes (see Stambulova et al., 2009). Schlossberg (1981) suggested that transitions required a complex coping process in which the positive or negative outcomes were determined by the coping resources of the individual during the transition. The most widely used model applied to athletes going through career transition is Stambulova's (1994, 2003) athletic career transition model. Stambulova's model (1994, 2003) considers a career transition as a process of coping with a set of specific demands/challenges that is necessary for continuing athletic careers successfully or adjusting to post-career life. In this regard, Stambulova (1994, 2003) views career transitions in sport as a lifespan process. Transitions happen throughout the athletic career, and in order to continue in sport, the athlete must cope with the challenges of each transition or leave the sport. Moreover, the final transition in an athletic career is retirement or discontinuation of sport participation. Athletic career termination is viewed as a holistic process in which the development of coping strategies and resources throughout an athletic career are critical to a successful transition to life after sport (Stambulova et al., 2009). Alfermann and colleagues (2004) emphasize that life after sport interventions need to help

athletes understand the resources available to them and enhance readiness for the transition to life after sport. Furthermore, they suggest supplementing group interventions with individual sessions in order to better assist each athlete. Samuel and Tenenbaum (2011b, 2013) describe these transitions as change events, and that a positive coping response to change events is dictated by self-exploration, decision-making, and self-growth. The third hypothesis predicts the CD intervention should enhance treatment compared to control student-athletes' coping skills in order to increase their coping resources so they feel more prepared to cope with life after sport.

Positive and negative emotions regarding life after sport. In a qualitative study examining career-ending injuries, Stoltenburg and colleagues (2011) found that there was a wide variety of both positive and negative emotions that athletes experienced at the end of their sport career. Emotional reactions to life after sport, whether retirement is planned or unplanned, are common throughout the literature on athlete retirement (e.g., Alfermann et al., 2004; Cecic Erpic, Wylleman, & Zupancic, 2004; Stambulova, Stephan, & Japhag, 2007). Alfermann and colleagues (2004) found that planning for retirement led to a significant increase in adaptive emotional and behavioral outcomes. Similarly, Stambulova and colleagues (2007) also found that athletes who engaged in retirement planning had more positive emotions and coping strategies for dealing with life after sport compared to athletes who planned minimally. Although emotions about life after sport have not previously been examined as a CD intervention outcome, Hypotheses 4 and 5 (H4 and H5) predict treatment athletes should report significantly more positive and less negative emotional responses when thinking about life after sport compared to control athletes.

Behavioral outcomes. The behavioral outcomes examined by the WMACD are intended to measure behavior change as a result of the intervention. Self-reported engagement in common career development behaviors, positive stage of change advancement, and completion of several take-home tasks related to the intervention were designed to provide an indication of behavior change progress among participants. Currently minimal research has actually examined behavior change as an outcome of career development interventions for student-athletes, so this study is among the first to go beyond psychosocial outcomes and assess changes in key career development behaviors. Hypothesis 6 (H6) predicted that career development behaviors would increase significantly for treatment compared to control athletes.

Stages of change. The Stages of Change Model is a transtheoretical model that has been considered in the life after sport literature (Park, Tod, & Lavalley, 2012). The Stages of Change Model suggests five major stages of change that individuals go through when experiencing behavior/life change (Prochaska & DiClemente, 1983). The five stages are (a) pre-contemplation (i.e., behavior change is not being considered), (b) contemplation (i.e., individuals' awareness of the need for behavior change has occurred), (c) preparation (i.e., individuals prepare to initiate change), (d) action (i.e., individuals start behavior change), and (e) maintenance (i.e., individual behavior change persists for 6 months or more and becomes more habitual). The stages of change are not necessarily linear and relapse to a previous stage is common. In a qualitative study using focus groups, Park and colleagues (2012) found that athletes discussed their retirement from sport in the context of the first four stages (i.e., pre-contemplation, contemplation, preparation, and action). Congruent with Stambulova and colleagues (2009), Park et al. (2012) concluded that proactive interventions early in an

athlete's career would be an effective strategy to assist them with the transition to life after sport. Furthermore, they suggest that career development practitioners can better assist athletes if they identify their current stage of change. These findings indicate that life after sport interventions for athletes need to assist athletes with their specific situation and consider the athletes current stage of change. The seventh hypothesis (H7) proposes that a treatment student-athletes' current stage of change will move more toward the maintenance phase as a result of the intervention compared to control participants.

Take-home career tasks. Written tasks and tasks to be completed outside of the intervention have been identified as key components to effective career development interventions (Brown et al., 2003; Wylleman et al., 2004). Furthermore, it seems that completion of career development tasks would be a good indicator of active engagement in career development behaviors. Hypothesis 8 (H8) predicts that student-athletes participating in the intervention will complete a majority of take-home tasks they are challenged with during the intervention.

Recent research on career development interventions for student-athletes is currently limited as indicated by the prevalence of older studies in the literature compared to minimal recent studies. Continued research in this area is critical to improving support for student-athletes as they approach life after sport. This study addresses a much needed area of research and seeks to provide more current information on multidisciplinary interventions that combine CD and SP approaches for student-athletes and assess effectiveness by examining both behavioral as well as psychosocial outcomes.

Method

Design and Participants

A quasi-experimental pretest-posttest design was used to assess the effectiveness of a 9-week long career development intervention created to enhance targeted psychosocial and behavioral outcomes. Additionally, this study used a treatment and a control group to investigate differences between participating in the intervention (i.e., treatment group) and a control group receiving no intervention exposure. Participants in both groups were a convenience sample of volunteers, and participant recruitment was driven by a matching process that focused on educational experience and sport type to ensure similarity between groups. Student-athletes in this study ($M age = 20.03$) participated in collegiate sports including cross country, basketball, football, golf, soccer, swimming, track and field, and volleyball and had been playing their respective sport competitively for an average of 9.49 years. Participants were evenly split between male ($N = 17$) and female ($N = 19$), and a majority identified as white ($N = 24$) with seven identifying as black, one as Asian, and four as other.

Eighteen NCAA Division I athletes from a University in the Northwestern United States served as the intervention group for this study, and eighteen fellow athletes from the same institution served as the control group. Specifically, an initial intervention group comprised of nine juniors and seniors was matched with a control group of ten upperclassmen. A second intervention group comprised of nine freshman and sophomore student-athletes was paired with a control group of eight freshman and sophomore teammates.

Instruments

Participants completed six self-report inventories. Treatment group athletes also completed the Career Development Intervention Effectiveness Survey (CDIES) to assess

intervention effectiveness, user-friendliness, and take-home project completion following study conclusion.

Collegiate Athlete Life after Sport Demographic Questionnaire (CALSDQ). The CALSDQ was designed for this study to obtain basic demographic information (i.e., 7-items) about participants' age, gender, ethnic background, year in school, declared major, and sport experience (e.g., sport type and years of playing experience).

Career Decision-Making Self-Efficacy Scale-Short Form (CDMSES-SF). The CDMSES-SF is a 25-item measure that assesses individuals' belief that they can successfully complete tasks necessary for making career decisions (Betz et al., 1996), based on the original 50-item CDMSES (Taylor & Betz, 1983). The CDMSES-SF was intended to measure five 5-item subscales based on Crites's (1978) career maturity model: (a) accurate self-appraisal (b) gathering occupational information, (c) goal selection, (d) making future plans, and (e) problem solving. However, due to the small sample size used in this study, the researchers chose to use the total score as an indicator of total career decision-making self-efficacy (Betz et al., 1996). A sample item from the CDMSES-SF is, "How confident are you that you could determine what your ideal job would be?" Respondents rate their confidence on a 5-point Likert-type scale ranging from 1 (*no confidence at all*) to 5 (*complete confidence*), with higher scores indicative of greater levels of career decision self-efficacy (Betz, Hammond, & Multon, 2005).

Acceptable levels of internal consistency have consistently been reported for the five factor model (see Betz et al., 2005, 1996). Additionally, Buyukgoze-Kavas (2014) and Gaudron (2011) confirmed high test-retest reliability, structural validity evidence for a four-

factor CDMSES-SF, and convergent validity in the form of theoretically-interpretable correlations with a measure of generalized self-efficacy (Buyukgoze-Kavas, 2014).

Change-Event Inventory (CEI). The CEI is a four-section instrument designed to assess athletes' (a) experience of change-events, (b) perception of and reaction to a single change-event, (c) decision-making, and (d) availability of help resources (Samuel & Tenenbaum, 2011a). The current study only examined one change-event (i.e., retirement from sport), and participants were current student-athletes who had not yet experienced this change-event. For this reason only the last section (i.e., 32 items) of the CEI was used to assess how student-athletes plan to cope with life after sport and what resources they have used or plan on using.

One sample item from the CEI is "Please indicate for each of the following to what degree did you feel that consulting the persons was helpful in coping with this event?" Family was the first of ten persons rated on the value of their coping support. Respondents were asked to rate each coping resource on a 7-point Likert-type scale ranging from 1 (*very unhelpful*) to 7 (*very helpful*). Acceptable levels of internal consistency have been found for the items of the CEI (Samuel & Tenenbaum, 2011a). Initial concurrent validity has been established through theoretically interpretable relationships with athlete identity (see Samuel & Tenenbaum, 2011a for a detailed overview of the psychometric properties of the CEI).

Life after Sport Survey (LASS). The LASS is a newly developed survey designed to examine student-athlete perceptions about life after sport (Vaartstra & Burton, 2014). Specifically, it contains three sections that address (a) current level of planning for life after sport, (b) current resources being used to help plan and cope with life after sport, and (c) current emotions/feelings towards life after sport. Initial exploratory factor analysis was

conducted on the emotions subscales of the LASS using data collected from over 200 student-athletes, and yielded a two-factor solution labeled positive and negative emotions. Each subscale consists of six emotions (e.g., excitement, fear), and participants are asked to rate how often they feel the emotion when thinking about life after sport on a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*always*). For the purpose of this study, a shortened version of the LASS (28 items) was used removing items that are not relevant to the research questions in this study.

Sport Motivation Scale-6-Career Development (SMS-6-CD). The SMS-6-CD is a 24-item measure of motivation originally created to assess sport motivation (Mallett, Kawabata, Newcombe, Otero-Forero, & Jackson, 2007). For the purpose of this study, the items were modified to measure motivation to engage in career development behavior rather than sport motivation. The SMS-6-CD is conceptualized as a 6-factor instrument with the stem, "Why do you engage in career development activities?" followed by 4 items per subscale relating to amotivation (e.g., "I don't seem to be enjoying my career as much as I previously did."), external regulation (e.g., "To show others how good I am in my career field."), introjected regulation (e.g., "Because I must engage in my career regularly."), identified regulation (e.g., "Because career development will improve my career options."), integrated regulation (e.g., "Because participation in my career is an integral part of my life."), and intrinsic motivation (e.g., "For the pleasure of discovering new career strategies and tools."). Respondents rate the extent to which each item corresponds to reasons why they engage in career development behaviors on a 7-point Likert-type scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*). Acceptable levels of internal consistency for each SMS-6 subscale have been shown in the literature (Mallett et al., 2007). Mallett and

colleagues (2007) also provided concurrent validity evidence in the form of theoretically interpretable correlations with measures of flow. Furthermore, confirmatory factor analysis supported the 6-factor structure of the instrument (see Mallett et al., 2007 for a psychometric review of the SMS-6).

Career Development Behaviors Survey (CDBS). The Career Development Behaviors Survey is a 16-item self-report inventory that asked participants to identify their current levels of engagement in career behaviors. The CDBS is separated into three categories (i.e., 5-items each) in order to assess participants' knowledge of career behaviors (CBknowledge; i.e., "I know how to create a strong resume."), future plans for career behaviors (CBplanning; i.e., "I am actively planning to create a strong resume."), and completion of career behaviors (CBcompletion; i.e., "I have successfully created a strong resume."). Respondents rate the extent to which they agree with each item on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A composite variable (i.e., CBtotal) was calculated by averaging the scores for CBknowledge, CBplanning, and CBcompletion. Participants also identified their own current stage of change in regard to career development behavior.

Career Development Intervention Effectiveness Survey (CDIES). The CDIES is a 14-item self-report inventory developed for this study to assess respondents' perceptions about the effectiveness of the intervention and the level to which they completed the take-home challenges during the intervention. A sample item from the IES is, "How effective do you think the groups sessions were in preparing you for life after sport?" Respondents rate their perceived level of effectiveness on a 5-point Likert-type scale ranging from 1 (*not effective*) to 5 (*very effective*).

Participant stage of change. The stage of change each participant is in during the intervention was assessed by the primary researcher during the individual sessions and participants were asked to reflect on their career development behavior and determine their current stage of behavior change at both pre- and post-assessment as part of the CDBS.

Procedure

The procedure is presented in two parts, with the first section describing the intervention protocol and the second section describing the intervention assessment protocol.

Intervention protocol. The career development intervention protocol consisted of six group meetings over three weeks and one individual meeting for each participant in the intervention group. Following the suggestions of Wylleman and colleagues (2004), the group meetings were structured as an educational workshop series on global career development topics including: career exploration, resume and cover letter building, self-marketing, networking, job searching, and interview skills. Topics were supported with individual goal setting, opportunities to learn about careers, further career exploration outside of the workshop, opportunities to compare different career options, modeling of effective career decision-making, and personalized feedback through individual sessions as suggested by Brown and colleagues (2003). Each group session consisted of specific learning objectives related to the topic, contained topic-relevant resources for each participant to utilize, and provided participants with specific take-home projects they used to further explore the topic for that session (see Table 1 for a detailed breakdown of each session by topic).

Burton and Raedeke (2008) suggest that mental tools and skills are best learned by breaking the process up into three primary phases (i.e., Education, Acquisition, and Implementation). The structure for each group session was discussion-based lecture where the

participants engaged in discussion with the group, shared their own career development stories, and asked questions of the facilitator for clarification and further exploration (i.e., Education Phase). Additionally, worksheets and handouts during the group sessions contributed to the Education Phase and allowed the participants to practice what they were learning about both career development and mental tools and skills (i.e., Acquisition Phase).

To further the acquisition of career development skills, the individual meetings were structured as personalized sessions focused on using the material from the workshops, discussing individual goals, identifying and developing tools to accomplish those goals, and providing student-athletes with support in their life after sport decision-making process on an individual basis. Each participant was at a different place in their own career development, so individual sessions were tailored to participants' needs.

Interventions that utilize both group and individual components have been shown to be effective (Brown et al., 2003; Komarraju et al., 2014). Take-home challenges for each group session provided participants with the opportunity to apply the skills they learned and practiced (i.e., Implementation Phase). Furthermore, participants in the junior and senior intervention group participated in a "community of learners" that met for 6-weeks after the intervention was completed. These group sessions were structured as a peer-support group that allowed participants to have a social support and problem-solving system to enhance their implementation of the skills learned during the intervention. In these follow-up sessions, participants evaluated their current career plans and worked towards completing relevant career goals to enhance their career development. Additionally, during each session a different mental tool or skill was discussed in the context of career development, including: goal setting, relaxation, self-talk, motivation, self-confidence, stress management. The

intervention was completed as planned with approximately five percent direct topic deviation due to group discussion of related career development and/or mental tools and skills topics.

Assessment of intervention effectiveness. Upon Institutional Review Board approval, permission was obtained from the athletic department to recruit volunteers for the study from their student-athlete population. Written informed consent was obtained from all student-athletes prior to completing any surveys. Student-athlete treatment and control participants were given the survey instrument pre-intervention that included a general set of anti-social-desirability instructions. At the end of the intervention, student-athletes completed the survey instrument again as the post-intervention assessment, so there were pre- and post-assessments for both groups. Participants in the treatment group were also given the survey instrument again six weeks (i.e., junior/senior group) and two weeks (i.e., freshman/sophomore group) following the intervention at the completion of the “community of learners” meetings. Both groups participated in the “community of learners” meetings, but due to time constraints, the freshman/sophomore group only had two weeks of meetings compared to six weeks for the junior/senior group. After the data collection was complete, the control group was given the opportunity to attend the intervention training program. E-mail addresses for the participants were also collected for potential multi-year follow-up.

All three surveys were taken in-person and took approximately 15 minutes to complete. A series of one-way repeated measures analyses of variance (ANOVA) were conducted to assess significant differences between the intervention and control groups. Although conducting multiple ANOVA’s can inflate error rate in the findings, the nature of the multiple groups that ended up participating in the study made it necessary to conduct a series of ANOVA’s to assess the research questions addressed in this study. Additionally, due

to the small sample size for each group, all analyses assessed significance at an alpha level \leq .10.

Results

Results compare the treatment versus the control group data from pre to post intervention for selected psychosocial and behavioral outcome variables. Specifically, separate analyses were run to examine differences between the junior/seniors and freshman/sophomore treatment groups, as well as combined treatment (i.e., all intervention participants freshman through senior) and control (i.e., all control participants freshman through senior) groups. No univariate or multivariate outliers were found in the data, so all participants' data was included in the analysis.

ANOVA Results Comparing Treatment and Control Groups

Junior/senior versus freshman/sophomore ANOVA results. A series of 2 X 2 one-way repeated measures ANOVA's were calculated to examine the effects of class (i.e., junior/senior versus freshman/sophomore) and time (i.e., pre- versus post-intervention) on each of the psychosocial and behavioral outcome variables. The ANOVA results revealed no significant group by time interaction effects. It is worth noting that significant group effects were found for three of the variables. The junior/senior athletes had higher positive emotions ($F(1,12) = 5.58, p < .04, \text{partial } \eta^2 = .32$) and intrinsic motivation ($F(1,11) = 33.41, p < .001, \text{partial } \eta^2 = .75$), and lower amotivation ($F(1,11) = 3.32, p < .1, \text{partial } \eta^2 = .23$) across each time point than did freshman/sophomore participants. Thus, student-athletes who were closer to finishing their degree had increased positive emotions about life after sport and increased intrinsic motivation to engage in career development behaviors than did student-athletes just starting their college sport career. The student-athletes closer to finishing their

degree also had less amotivation towards career development behaviors than did their younger counterparts. Because the two groups did not have any significant differences across the intervention outcomes, it was deemed acceptable to combine the groups for further analysis.

Combined treatment versus control ANOVA results. A series of 2 X 2 one-way repeated measures ANOVA's were calculated to examine the effects of group (i.e., Intervention and Control) over time (i.e., pre- versus post-intervention) on each of the psychosocial and behavioral outcome variables for a combined groups that merged all treatment and control participants (i.e., freshman, sophomore, junior, senior). ANOVA results revealed significant group by time interaction effects for ten of the fifteen variables (see Figure 2), including: (a) career decision-making self-efficacy ($F(1,34) = 23.89, p < .001$, partial $\eta^2 = .41$), (b) positive emotions ($F(1,34) = 3.01, p < .09$, partial $\eta^2 = .08$), (c) amotivation ($F(1,30) = 4.72, p < .04$, partial $\eta^2 = .14$), (d) identified regulation ($F(1,30) = 5.27, p < .03$, partial $\eta^2 = .15$), (e) integrated regulation ($F(1,30) = 5.92, p < .02$, partial $\eta^2 = .17$), (f) CBknowledge ($F(1,33) = 42.07, p < .001$, partial $\eta^2 = .56$), (g) CBcompletion ($F(1,34) = 5.73, p < .02$, partial $\eta^2 = .14$), (h) CBplanning ($F(1,33) = 12.5, p < .001$, partial $\eta^2 = .28$), (i) CBtotal ($F(1,34) = 23.7, p < .001$, partial $\eta^2 = .41$), and (j) stage of change ($F(1,34) = 18.01, p < .001$, partial $\eta^2 = .35$). Intrinsic motivation also approached significance ($F(1,30) = 2.75, p < .11$, partial $\eta^2 = .08$).

The treatment group increased more from pre- to post-intervention on career decision-making self-efficacy, positive emotions, identified regulation, integrated regulation, CBknowledge, CBcompletion, CBplanning, CBtotal, and stage of change than did the control group who remained stable or decreased over time (see Table 2). Conversely, the treatment group decreased from pre- to post-intervention their amotivation, while the control group

increased on amotivation over time (see Table 2). Furthermore, partial η^2 values indicate a moderate effect sizes ($\eta_p^2 > .13$) for four outcome differences (i.e., amotivation, identified regulation, integrated regulation, and CBcompletion) and large effect sizes ($\eta_p^2 > .27$) for the five other differences (i.e., career decision-making self-efficacy, CBknowledge, CBplanning, CBtotal, and stage of change).

Additionally, significant effects for time were found for external regulation ($F(1,30) = 11.63, p < .002, \text{partial } \eta^2 = .28$), introjected regulation ($F(1,30) = 9.08, p < .005, \text{partial } \eta^2 = .23$), intrinsic motivation ($F(1,30) = 14.52, p < .001, \text{partial } \eta^2 = .33$), and coping total ($F(1,34) = 3.52, p < .07, \text{partial } \eta^2 = .09$), whereas significant group effects were found for introjected regulation ($F(1,30) = 4.66, p < .04, \text{partial } \eta^2 = .13$). Both groups (i.e., treatment and control) increased from pre- to post-intervention in external regulation, introjected regulation, intrinsic motivation, and coping total. Additionally, significant group differences were found between treatment and control group for introjected regulation.

Discussion

The results of this study indicate that a career development training program tailored to student-athletes can enhance both psychosocial and behavioral outcomes targeting career development. Furthermore, it appears that career development training is effective regardless of class (i.e., freshman, sophomore, junior, or senior), although juniors and seniors seemed to benefit more from the CD intervention than did freshman and sophomores.

Psychosocial Variables

The WMACD predicted that career decision-making self-efficacy, intrinsic motivation, change event coping, and positive emotions would improve significantly more for the treatment compared to the control group as a result of the CD intervention, whereas

negative emotions would decline. The results of this study provided moderately strong support of these hypotheses.

Career decision-making self-efficacy. As predicted in the first hypothesis, the treatment group showed a significant increase in career decision-making self-efficacy from pre- to post-intervention compared to the control group. Furthermore, the effect size supports the notion that a large portion of the self-efficacy variance is attributable to the intervention. This finding supports previous studies that have shown that using a variety of different CD strategies (Foss & Slaney, 1986; Gati, Ryzhik, & Vertsberger, 2013; Reese & Miller, 2006) improves career decision-making self-efficacy across a variety of different populations. Moreover, this study expanded on the current research by using a career development training program that was specifically tailored for student-athletes (see Brown et al., 2003; Wylleman et al., 2004 for a review) and by demonstrating that a career development intervention will improve student-athletes career decision-making self-efficacy regardless of grade level.

Motivation. According to the Hypothesis 2, it was predicted that self-determined motivation for career development behaviors would significantly increase for treatment compared to the control participants. When looking at the combined groups, amotivation towards career development behaviors was significantly lower in the treatment than control groups, and identified regulation and integrated regulation were significantly higher for treatment compared to the control participants, with intrinsic motivation closely approaching significance. Thus, treatment student-athletes' amotivation towards career development behaviors decreased over the intervention, while the control athletes' amotivation was shown to increase, supporting H2 that the career development training program had a positive impact on motivating student-athletes to engage with career development. The more autonomous

types of extrinsic motivation (i.e., identified and integrated regulation) increased over time for the intervention compared to the control groups, and intrinsic motivation approached significance. Interestingly, the failure of intrinsic motivation to reach significance seems to be attributable to the freshman/sophomore portion of the sample being significantly lower on intrinsic motivation than were the junior/senior participants. It may be that the freshman/sophomore group was too young or too far removed from the end of their college sport career to experience increases in intrinsic motivation high enough to initiate the CD process (e.g., no immediate external pressure to engage in career behaviors), so their motivation was not fully internalized as they are not yet completely engaged or even committed to their current career choices. Additionally, development of intrinsic motivation is typically a longer process than most forms of extrinsic motivation as one moves through the self-determined motivation continuum (Deci & Ryan, 2002). Thus, underclass athletes may not have as much time and experience meeting their needs for competency and autonomy to become as intrinsically motivated about CD compared to their older peers. Despite the short CD intervention timeframe, the significant group differences on the two most autonomous forms of extrinsic motivation and the near significance of intrinsic motivation provide solid support for H2. Effect sizes also indicated a moderate portion of the variance can be attributed to the intervention. Overall, the results of this study support previous findings (Komarraju et al., 2014) on the positive relationship between intrinsic motivation and career decision-making self-efficacy and demonstrate that participation in a career development training program can increase intrinsic motivation and autonomous forms of extrinsic motivation towards career development behaviors.

Coping. The third hypothesis predicted that student-athletes who participated in the intervention would have increased levels of effective coping and seek out more social support for their career development than would control group participants. The results of this study did not support this hypothesis because no significant differences were found when comparing the intervention and control groups for either coping or coping support. Due to the focus of the training program (e.g., career development) and the instrument used to measure coping (i.e., CEI measuring change events), it may be that the program did not impact coping with a change event, but rather impacted coping by proactively making career decisions prior to experiencing the change event of sport career termination. Further study is needed to determine the full effect of a CD intervention on coping, particularly after career termination has occurred.

Emotion. Hypotheses 4 and 5 predicted positive emotions toward life after sport would significantly increase for treatment compared to control participants, whereas negative emotions were hypothesized to follow the opposite pattern. These two hypotheses were partially supported as positive emotions significantly increased over time for the treatment compared to the control group, but no significant interaction was found for change of negative emotions over time, despite a trend in the desired direction. It is worth noting that overall scores for negative emotions were relatively low indicating that most student-athletes were not experiencing a great deal of negative emotions regarding life after sport during the study, possibly because many of the student-athletes were still at least a semester away from graduation at the time of the intervention. Overall, the results of this study support previous findings (Alfermann et al., 2004; Stambulova et al., 2007) that career planning has adaptive

effects on emotional outcomes, and further indicates that student-athletes benefit from a career development intervention through enhanced positive emotions about life after sport.

Behavioral Variables

The WMACD predicted that treatment compared to control group's engagement in career development behaviors, stage of change, and take-home challenge tasks would significantly improve as a result of the career development training program. The results of this study strongly support these hypotheses.

Career development behaviors. One of the primary purposes of this study was to extend the CD research by examining if a multifaceted CD/SP intervention would impact actual career development behaviors in student-athletes. Consequently, student-athletes were asked to self-report (a) their knowledge of how to use common career development behaviors (i.e., CBknowledge), (b) their completion of common career development behaviors (i.e., CBcompletion), and (c) their plan to complete additional common career development behaviors (i.e., CBplanning) at both pre- and post-intervention. Results strongly support Hypothesis 6 by revealing significant interaction effects over time for all three subscales of the CDBS (i.e., CBknowledge, CBcompletion, and CBplanning) as well as CBtotal (i.e., a summed average of all items combined) for the treatment compared to control groups. Additionally, moderate effect size for CBcompletion and large effect size for CBknowledge, CBplanning, and CBtotal indicate a moderate to high portion of the variance can be attributed to the intervention. Previous research has not specifically examined behavioral outcomes for a career development intervention for student-athletes, and these data strongly support the prediction that through a relatively short career development training program, student-athletes' career behaviors can be improved.

Stage of change. These behavioral findings further supported the seventh hypothesis by demonstrating a significant difference between the treatment and control groups' reported progress through the stages of change across the intervention. On average, both intervention ($M = 2.61$) and control ($M = 2.67$) student-athletes started part way between the contemplation stage and preparation stages. However, by the conclusion of the intervention, the treatment group ($M = 4.11$) progressed to a significantly higher stage of change than the control group ($M = 2.72$). On average the treatment group advanced to the action phase, while the control group remained in the contemplation/preparation stage. Furthermore, the effect size for stage of change indicated a relatively large portion of the variance can be attributed to the intervention. Park et al. (2012) found that athletes discussed their career development in accordance with the stages of change, and along with Stambulova and colleagues (2009), suggested that individualized interventions should be used early in athletes' career to assist with the transition to life after sport. Although the results of this study cannot suggest that these student-athletes had a better transition to life after sport, the results do demonstrate that a targeted career development training program that incorporates an individual component can help athletes progress through the stages of change systematically to better attain their career behavior goals.

Take-home challenges. The final behavioral outcome that the career development training program was predicted to enhance was the completion of CD tasks that were given as challenges at the end of each group intervention session. On average, treatment participants were completing nearly half ($M = 2.57$) of the take home challenges at the first post-assessment, with a slight increase at the second post-assessment ($M = 2.64$). However, the junior/senior portion of the treatment group completed a higher percentage of tasks at both the

first ($M = 2.91$) and second post-assessment ($M = 3.62$), compared to the freshman/sophomore participants who decreased from the first post-assessment ($M = 2.23$) to the second ($M = 1.91$). This finding can be explained by the results that indicate the junior/senior treatment group had increased intrinsic motivation, identified regulation, and integrated regulation and decreased amotivation towards career development significantly more than did their freshman-sophomore teammates. Additionally, these results may have been affected by the shorter duration of the follow-up meetings for the freshman/sophomores and decreased amount of the time between the first and second post-assessments.

Limitations

The primary limitation of this study is the relatively small sample size (i.e., 18 treatment and 18 control participants). Due to student-athletes busy academic and athletic schedules, participants had to be recruited strictly as volunteers. One secondary finding of the study is that student-athletes may not think that career development training is of great value as demonstrated by the difficulty in finding participants for the study. Additionally, the intervention was kept to a length of 9 weeks for the junior/senior sample, and just 5 weeks for the freshman/sophomore participants due to end of semester timing reasons. Although career development interventions have varied in length from 30 minutes (Foss & Slaney, 1986) to 15 weeks (Reese & Miller, 2006), a longer intervention may improve effectiveness.

Implications and Future Research

Student-athletes indicated that they found both the group sessions ($M = 4.67$) and the individual session ($M = 4.44$) highly effective. Furthermore, they specified that they would strongly recommend ($M = 4.78$) a career development training program to their peers. One of the major implications from this study is the effectiveness of a career development training

program that is tailored to student-athletes. Preparing student-athletes for life after sport is an issue that has widespread impact on the student-athletes, universities, and the NCAA. This study demonstrated that a career development training program can enhance student-athletes' psychosocial perceptions about life after sport and increase their tendency to engage in career development behaviors. Practitioners and university support staff can enhance their ability to help student-athletes transition to life after sport by encouraging career development and referring student-athletes to career support services. Additionally, it may be valuable to incorporate more career development training into programs like the NCAA Life Skills courses. Further research is needed to identify the optimal length for the intervention. Adding a placebo treatment to the control group would also expand the findings of this study. Additionally, confirming the findings with a larger sample size will strengthen the generalizability of the results. Future research is also needed to examine the impact of different practitioners implementing the intervention. Longitudinal follow-up is planned for this study and should be encouraged with future studies to examine the long-term effects of a career development training program for student-athletes.

References

- Alfermann, D., Stambulova, N., & Zamaityte, A. (2004). Reactions to sport career termination: A cross-national comparison of German, Lithuanian, and Russian athletes. *Psychology of Sport and Exercise, 5*, 61-75. doi:10.1016/S1469-0292(02)00050-X
- Amiot, C. E., Gaudreau, P., & Blanchard, C. M. (2004). Self-determination, coping, and goal attainment in sport. *Journal of Sport and Exercise Psychology, 26*, 396–411.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.
- Betz, N. E., & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college women and men. *Journal of Counseling Psychology, 28*, 399-410.
- Betz, N. E., Hammond, M. S., & Multon, K. D. (2005). Reliability and validity of five-level response continua for the Career Decision Self-Efficacy Scale. *Journal of Career Assessment, 13*, 131–149.
- Betz, N. E., & Luzzo, D. A. (1996). Career assessment and the Career Decision-Making Self-Efficacy Scale. *Journal of Career Assessment, 4*, 413-428. doi: 10.1177/106907279600400405
- Betz, N. E., Klein, K., & Taylor, K. M. (1996). Evaluation of a short form of the Career Decision-Making Self-Efficacy Scale. *Journal of Career Assessment, 4*, 47-57.

- Betz, N. E., & Serling, D. (1995). *Fear of commitment and career decision-making self-efficacy*. Unpublished manuscript, Department of Psychology, Ohio State University.
- Brown, S. D., & Ryan-Krane, N. E. (2000). Four (or five) sessions and a cloud of dust: Old assumptions and new observations about career counseling. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (3rd ed., pp. 740–766). New York: Wiley.
- Brown, S. D., Ryan-Krane, N. E., Brecheisen, J., Castelino, P., Budisin, I., Miller, M., & Edens, L. (2003). Critical ingredients of career choice interventions: More analyses and new hypotheses. *Journal of Vocational Behavior*, *62*, 411-428.
doi:10.1016/S0001-8791(02)00052-0
- Burns, G., Jasinski, D., Dunn, S., & Fletcher, D. (2013). Academic support services and career decision-making self-efficacy in student athletes. *Career Development Quarterly*, *61*, 161-167. doi: 10.1002/J.2161 -0045.2013.00044.x
- Burton, D., & Raedeke, T. (2008). *Sport psychology for coaches*. Champaign, IL: Human Kinetics.
- Buyukgoze-Kavas, A. (2014). A psychometric evaluation of the Career Decision Self-Efficacy Scale-Short Form with Turkish university students. *Journal of Career Assessment*, *22*, 386-397. doi: 10.1177/1069072713484561
- Cecic Erpic, S., Wylleman, P., & Zupancic, M. (2004). The effect of athletic and non-athletic factors on the sports career termination process. *Psychology of Sport and Exercise*, *5*, 45-59. doi:10.1016/S1469-0292(02)00046-8
- Crites, J. O. (1978). *Career Maturity Inventory*. Monterey, CA: CTB/McGraw-Hill.

- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum Press.
- Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.
- Foss, C. J., & Slaney, R. B. (1986). Increasing non-traditional career choices in women: Relation of attitudes towards women and responses to a career intervention. *Journal of Vocational Behavior*, 28, 191-202.
- Fouad, N., Cotter, E. W., & Kantamneni, N. (2006). The effectiveness of a career decision-making course. *Journal of Career Assessment*, 17, 338-347. doi: 10.1177/1069072708330678
- Gaudron, J. (2011). A psychometric evaluation of the Career Decision Self-Efficacy Scale – Short Form among French university students. *Journal of Career Assessment*, 19, 420-430. doi: 10.1177/1069072711409713
- Komarraju, M., Swanson, J., & Nadler, D. (2014). Increased career self-efficacy predicts college students' motivation, and course and major satisfaction. *Journal of Career Assessment*, 22, 420-432. doi: 10.1177/1069072713498484
- Gati, I., Ryzhik, T., & Vertsberger, D. (2013). Preparing young veterans for civilian life: The effects of a workshop on career decision-making difficulties and self-efficacy. *Journal of Vocational Behavior*, 83, 373-385. doi: 10.1016/j.jvb.2013.06.001
- Luzzo, D. A. (1995). The relative contributions of self-efficacy and locus of control to the prediction of career maturity. *Journal of College Student Development*, 36, 61-66.

- Mallett, C., Kawabata, M., Newcombe, P., Otero-Forero, A., & Jackson, S. (2007). Sport Motivation Scale-6 (SMS-6): A revised six-factor sport motivation scale. *Psychology of Sport and Exercise, 8*, 600-614. doi:10.1016/j.psychsport.2006.12.005
- Navarro, C. M. (2013). Toward an understanding of career construction in the 21st century: A phenomenological study of the life experiences of graduating student-athletes at a large highly-selective Midwestern university (Working Paper). Retrieved from the Center for Leadership in Athletics website:
http://sites.education.washington.edu/uwcla/sites/sites.education.washington.edu.uwcla/files/Navarro%202013_Full.pdf
- Park, S., Tod, D., & Lavallee, D. (2012). Exploring the retirement from sport decision-making process based on the transtheoretical model. *Psychology of Sport and Exercise, 13*, 444-453. doi:10.1016/j.psychsport.2012.02.003
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J., Tuson, K. M., Briere, N. M., & Blais, M. R. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). *Journal of Sport and Exercise Psychology, 17*, 35-53.
- Prehar, A. C., & Ignelzi, D. A. (2012). Reaching psychology majors early about the importance of career planning: A classroom presentation. *Teaching of Psychology, 39*, 125-127. doi: 10.1177/0098628312437695
- Prochaska, J. & DiClemente, C. (1983) Stages and processes of self-change in smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology, 5*, 390-395.

- Ryan, N. E. (1999). *Career counseling and career choice goal attainment: A meta-analytically derived model for career counseling practice*. Unpublished doctoral dissertation, Loyola University, Chicago.
- Reese, R. J., & Miller, C. D. (2006). Effects of a university career development course on career decision-making self-efficacy. *Journal of Career Assessment, 14*, 252-266. doi: 10.1177/1069072705274985
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78.
- Samuel, R. D. & Tenenbaum G. (2011a). How do athletes perceive and respond to change-events: An exploratory measurement tool. *Psychology of Sport and Exercise, 12*, 392-406. doi:10.1016/j.psychsport.2011.03.002
- Samuel, R. D., & Tenenbaum, G. (2011b). The role of change in athletes' careers: A scheme of change for sport psychology practice. *The Sport Psychologist, 25*, 233-252.
- Samuel, R. D., & Tenenbaum, G. (2013). Athletes' decision-making in career change-events. *The Sport Psychologist, 27*, 78-82.
- Schlossberg, N. K. (1981). A model for analyzing human adaptation to transition. *Counseling Psychologist, 9*, 2-18.
- Stambulova, N. B. (1994). Developmental sports career investigations in Russia: A post-perestroika analysis. *The Sport Psychologist, 8*, 221–237.
- Stambulova, N. (2003). Symptoms of a crisis-transition: A grounded theory study. In N. Hassmen (Ed.), *SIPF yearbook 2003* (pp. 97–109). Orebro: Orebro University Press.

- Stambulova, N. B., Alfermann, D., Statler, T., & Cote, J. (2009). ISSP position stand: Career development and transitions of athletes. *International Journal of Sport and Exercise Psychology*, 7, 395-412.
- Stambulova, N. B., Stephan, Y., & Japhag, U. (2007). Athletic retirement: A cross-national comparison of elite French and Swedish athletes. *Psychology of Sport and Exercise*, 8, 101-118. doi:10.1016/j.psychsport.2006.05.002
- Stoltenburg, A. L., Kamphoff, C. S., & Lindstrom-Bremer, K. (2011). Transitioning out of sport: The psychosocial effects of collegiate athletes' career-ending injuries. *Online Journal of Applied Sport Psychology*, 13.
- Taylor, K. M., & Betz, N. E. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. *Journal of Vocational Behavior*, 22, 63-81.
- Vaartstra, M., & Burton, D. (2014). *Current student-athlete perceptions about life after sport*. Unpublished manuscript, Department of Movement Sciences, University of Idaho, Moscow, Idaho.
- Van Raalte, J. L., & Andersen M. B. (2007). When sport psychology consulting is a means to an end(ing): Roles and agendas when helping athletes leave their sports. *The Sport Psychologist*, 21, 227-242.
- Wylleman, P., Alfermann, D., & Lavalee, D. (2004). Career transitions in sport: European perspectives. *Psychology of Sport and Exercise*, 5, 7-20. doi:10.1016/S1469-0292(02)00049-3

Figure 1. Working Model of Athlete Career Development

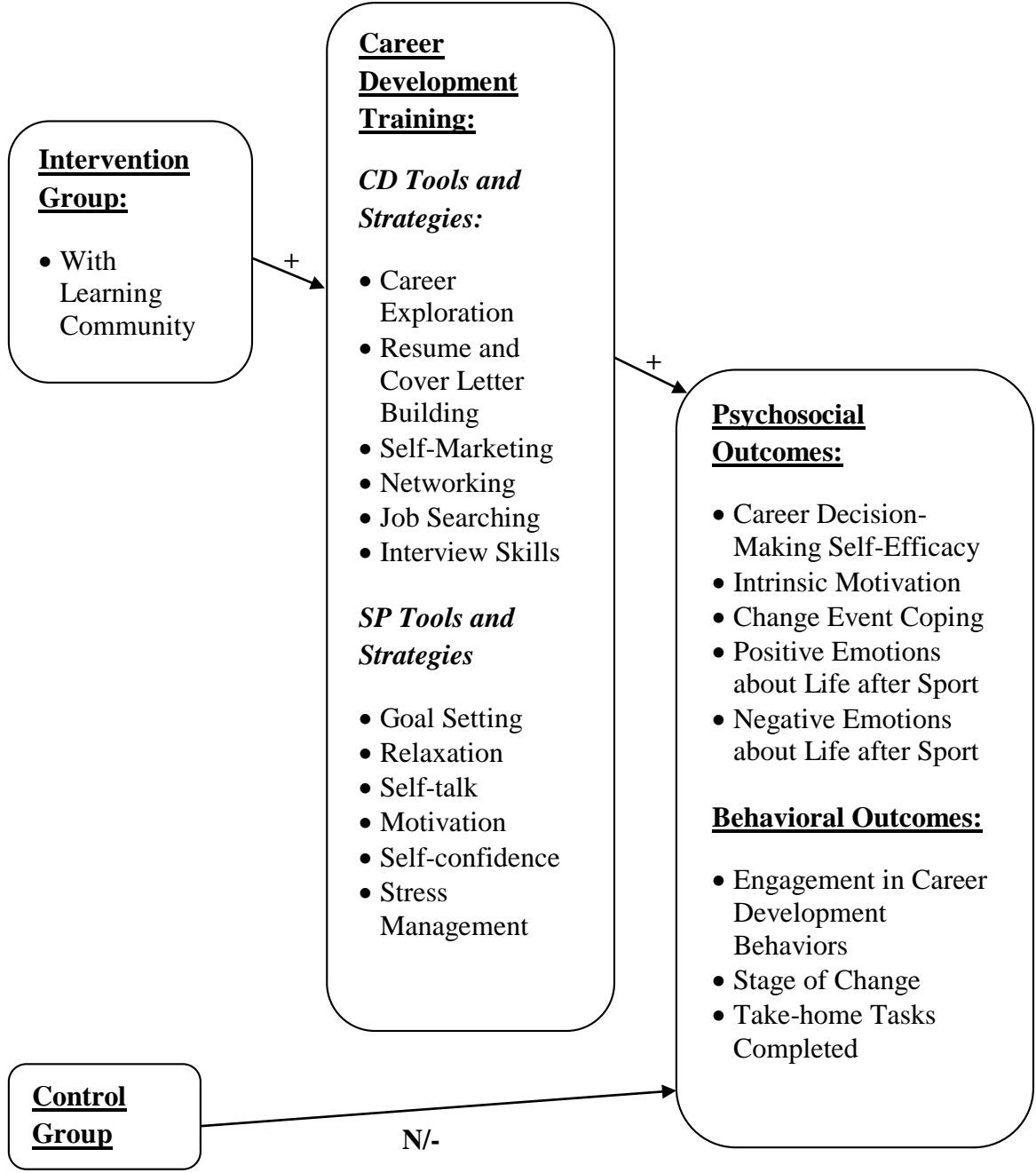
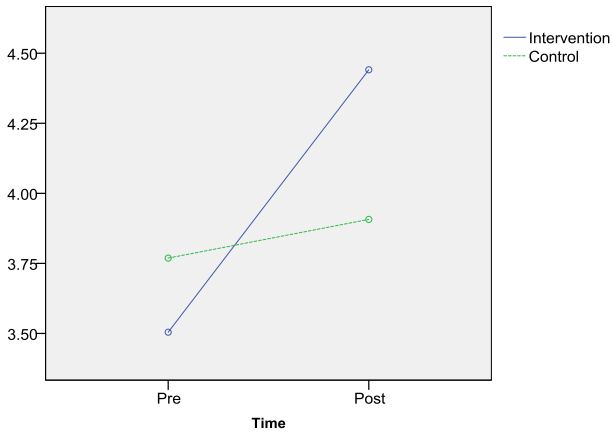
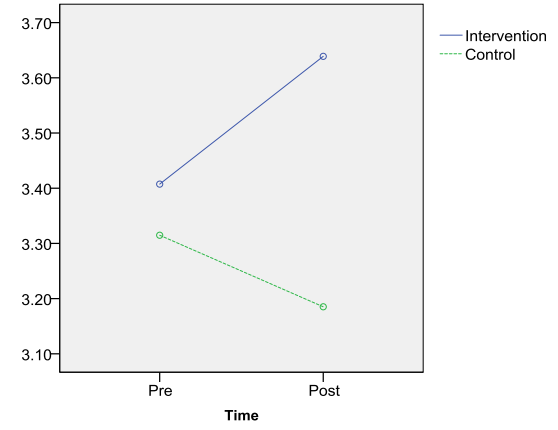


Figure 2. Interaction Effect Graphs (Time X Group) for Targeted Outcome Variables

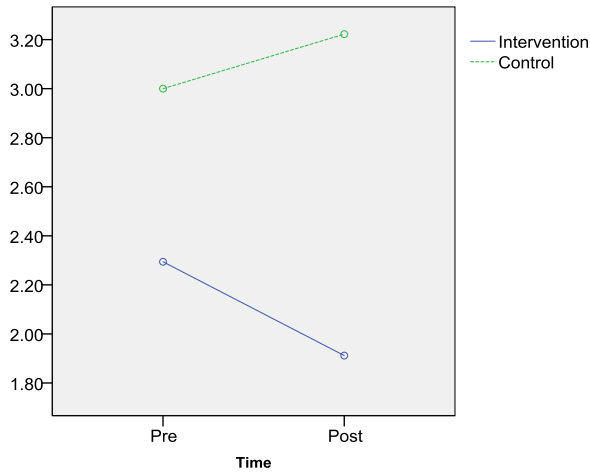
(a) Career Decision-Making Self-Efficacy



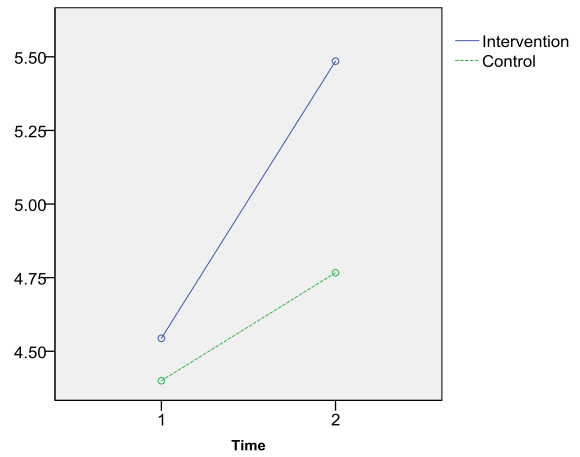
(b) Positive Emotions



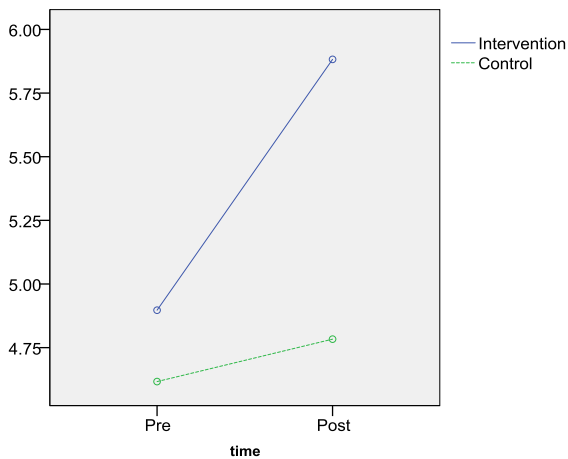
(c) Amotivation



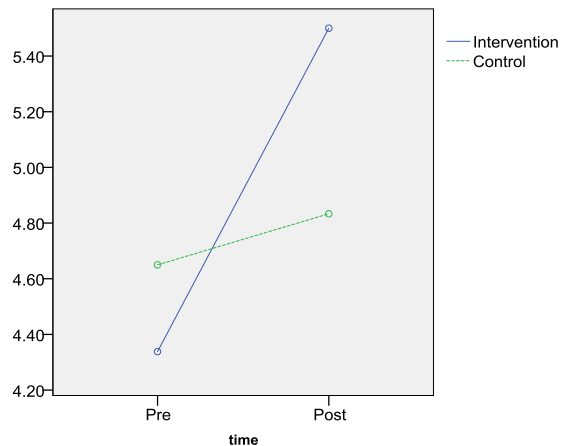
(d) External Regulation (*non-significant)



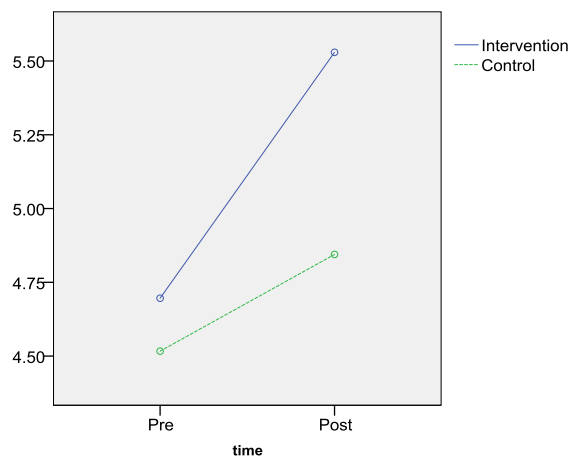
(e) Identified Regulation



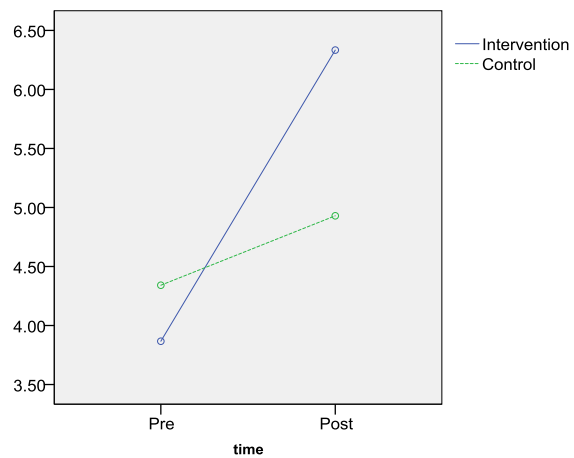
(f) Integrated Regulation



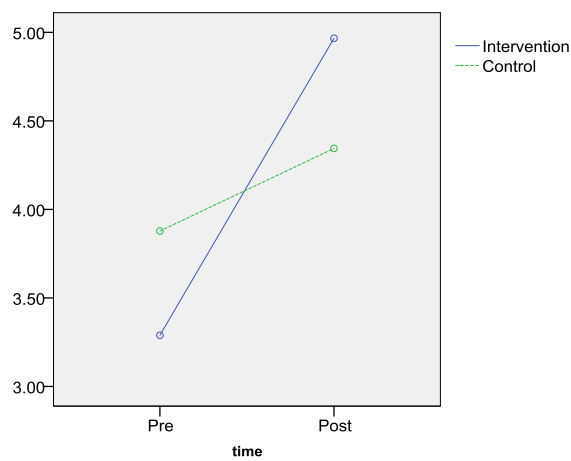
(g) Intrinsic Motivation (*non-significant)



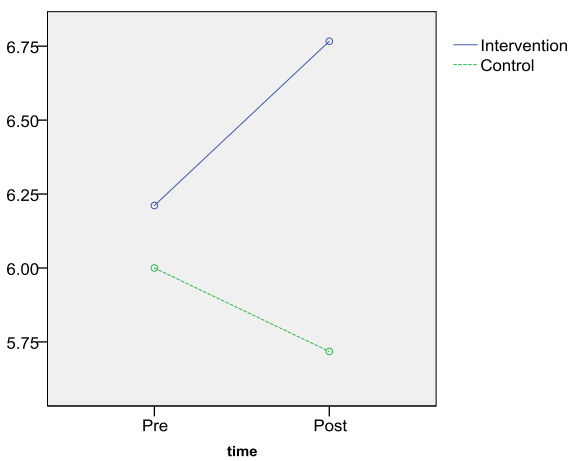
(h) CBknowledge



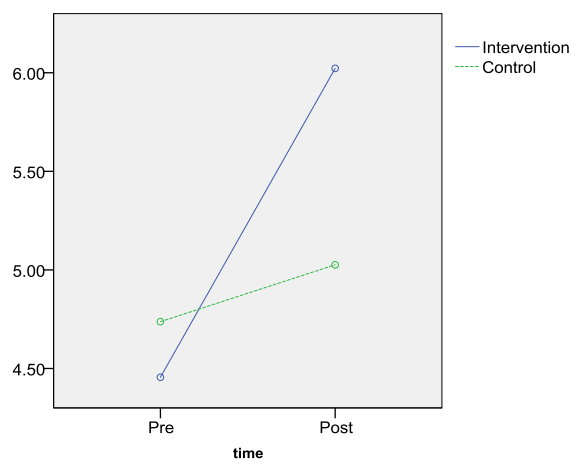
(i) CBplanning



(j) CBcompletion



(k) CBtotal



(l) Stage of Change

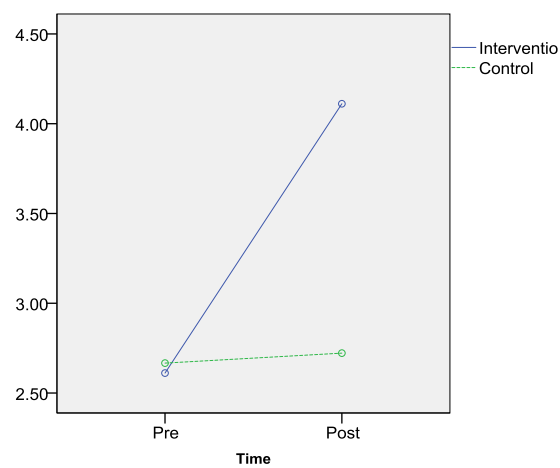


Table 1. Intervention Session Description Table

Session	Topic	Objectives	Resources	Take-Home challenges
1	Career Exploration	<ul style="list-style-type: none"> Explore Self, Majors, and Careers Discuss interests, skills, values, and priorities Examine timelines and create career plans Evaluate career goals 	<ul style="list-style-type: none"> Focus 2/Sokanu What Can I Do With This Major Timeline and Goal Setting Handouts 	<ul style="list-style-type: none"> Complete career assessments Explore career and major options Set career goals
2	Resume and Cover Letter Building	<ul style="list-style-type: none"> Learn how to create a resume Evaluate the format and content of resumes Express student-athlete experience Learn how to create a cover letter Discuss the importance of tailoring the resume and cover letter 	<ul style="list-style-type: none"> Resume samples Cover letter samples Action Verb Handout Tailored Cover Letter Handout 	<ul style="list-style-type: none"> Create or polish a resume Develop a targeted cover letter
3	Networking	<ul style="list-style-type: none"> Discuss what networking is and its importance Learn how to expand your network Introduce the informational interview Explore the 30-second introduction Examine network maintenance 	<ul style="list-style-type: none"> 30-second introduction handout Network Worksheet 	<ul style="list-style-type: none"> Create a 30-second introduction Complete the Network Worksheet Reach out to new network contacts
4	Self-marketing	<ul style="list-style-type: none"> Explore self-marketing Discuss the role of social media Learn about LinkedIn 	<ul style="list-style-type: none"> LinkedIn Handout 	<ul style="list-style-type: none"> Create a LinkedIn Update and manage online brand
5	Job Searching	<ul style="list-style-type: none"> Discuss job search strategies in three tiers <ul style="list-style-type: none"> The targeted job search Specific job boards General job boards 	<ul style="list-style-type: none"> Job Search Handout Hire A Vandal Webpage General job search links 	<ul style="list-style-type: none"> Identify and research companies Explore different job boards
6	Interview Skills	<ul style="list-style-type: none"> Discuss the interview process Learn interview prep strategies Practice interview questions Learn about professional dress and non-verbals Explore ways to talk about the student-athlete experience 	<ul style="list-style-type: none"> STAR Handout Interview Questions Handout Questions to Ask Handout Professional Dress Handout 	<ul style="list-style-type: none"> Identify professional dress for your field Practice common interview questions Review your experiences to know your stories
Individual	Participant Choice	<ul style="list-style-type: none"> Expand upon group session topics Help the participant based on their stage of change Review resume and career assessment results 	<ul style="list-style-type: none"> Goal Setting Self-talk Self-confidence Motivation Arousal Control 	<ul style="list-style-type: none"> Based on participant needs
Community of Learners	Mental Tools and Skills	<ul style="list-style-type: none"> Apply mental tools and skills to career development (CD) topics Discuss CD progress Feedback from researcher/peers 	<ul style="list-style-type: none"> Goal setting/ Motivation Self-confidence/ Self-talk Stress Manag./ Relaxation 	<ul style="list-style-type: none"> Based on group and individual input during meetings

Table 2. Composite Treatment and Control Groups Means and Standard Deviations for Pre- and Post-Intervention Assessments of Career Decision-Making Self-Efficacy, Positive and Negative Emotion, Motivation Subscales, Coping, Career Behaviors, and SOC

	Intervention (n = 18)				Control (n = 18)				Group X Time		
	Pre-Intervention		Post-Intervention		Pre-Intervention		Post-Intervention		F	P	Partial Eta ²
	M	SD	M	SD	M	SD	M	SD			
Career Decision-Making Self-Efficacy	3.5	0.7	4.4	0.4	3.8	0.6	3.9	0.5	23.89	0.001	0.41
Positive Emotions	3.4	0.5	3.6	0.7	3.3	0.9	3.2	0.9	3.01	0.09	0.08
Negative Emotions	2.9	0.8	2.9	0.8	2.0	1.1	2.7	0.8	0.38	0.54	0.01
Amotivation	2.3	1.0	1.9	1.0	3.0	1.3	3.2	1.6	4.72	0.04	0.14
External Regulation	4.5	1.0	5.5	0.9	4.4	0.9	4.8	0.9	2.24	0.15	0.07
Introjected Regulation	4.6	0.9	5.2	1.0	4.0	0.8	4.6	0.9	0.00	0.95	0.00
Identified Regulation	4.9	0.6	5.9	0.7	4.6	1.1	4.8	0.8	5.27	0.03	0.15
Integrated Regulation	4.3	1.0	5.5	0.8	4.7	0.9	4.8	0.9	5.92	0.02	0.17
Intrinsic Motivation	4.7	0.8	5.5	1.0	4.5	0.8	4.8	0.8	2.75	0.11	0.08
CBknowledge	3.9	0.8	6.3	0.6	4.3	0.8	4.9	1.1	42.07	0.001	0.56
CBcompletion	3.3	1.4	5.0	1.2	3.9	1.5	4.3	1.8	5.73	0.02	0.14
CBplanning	6.2	0.7	6.8	0.4	6.0	0.8	5.7	1.3	12.50	0.001	0.28
CBtotal	4.5	0.8	6.0	0.5	4.7	0.9	5.0	1.2	23.70	0.001	0.41
Coping Total	3.8	0.6	4.3	0.8	3.9	0.7	3.9	0.8	1.73	0.2	0.05
Stage of Change	2.6	0.8	4.1	0.5	2.7	0.9	2.7	1.1	18.01	0.001	0.35

Study 2

Why Career Development Interventions Work: How Psychosocial Mediators and Contextual Moderators Impact Intervention Outcomes

Career development (CD: Brown et al., 2003; Ryan, 1999) training has been shown to be an effective method for enhancing psychosocial outcomes associated with personal career development. Additionally, athletes who are transitioning out of sport have also been shown to benefit from enhanced confidence in their CD skills (Burns, Jasinski, Dunn, & Fletcher, 2013; Stambulova, Alfermann, Statler, & Cote, 2009; Wylleman, Alfermann, & Lavallee, 2004). Every year thousands of student-athletes in the NCAA alone are faced with the end of their sport careers, prompting them to work through the transition to life after sport (Irick, 2013). With the high number of student-athletes dealing with the transition to life after sport, the need for effective CD interventions for these athletes is more critical than ever. To that end, more sophisticated assessment techniques are needed to examine the effectiveness of interventions targeted towards student-athletes. Moreover, understanding how these interventions are impacting psychosocial and behavioral CD outcomes is critical to making this transition smoother and more effective.

Komaraju, Swanson, and Nadler (2014) found that the relationship between career decision-making self-efficacy and self-determined motivation was mediated by perceived gain in CD knowledge for undergraduate students. Thus, it appears that some psychosocial variables impacted by CD interventions may act as mediators and/or moderators of other intervention outcomes. The purpose of this paper is to examine the role that psychosocial variables play in enhancing CD behaviors during an intervention targeted towards collegiate student-athletes. Specifically, psychosocial variables will be examined as mediators and contextual variables as moderators of CD behavioral outcomes.

Working Model of Athlete Career Development

This study was shaped by a Working Model of Athlete Career Development (WMACD; see Figure 1). The WMACD predicts that a CD intervention (i.e., education and training in career exploration, resume and cover letter building, self-marketing, networking, job searching, interview skills) will result in improvements to several different psychosocial (i.e., self-efficacy, self-determined motivation, and change-event coping) and behavioral (i.e., CD behaviors) outcomes. The working model predicts that several of the psychosocial variables (i.e., self-efficacy, self-determined motivation, and coping) will function as mediators of the relationship between the intervention and the behavioral outcomes, while other contextual factors (i.e., stage of change and engagement) will moderate the impact of the intervention on behavioral outcomes.

The primary hypothesis of the WMACD in this study is that psychosocial variables may mediate and/or contextual factors may moderate increases in CD behaviors and/or improvement to psychosocial outcomes as a result of the intervention.

Behavioral Outcomes

The WMACD proposes that self-reported utilization of common CD behaviors would provide an indication of behavior change progress among participants. Currently minimal research has actually examined behavior change as an outcome of CD interventions for student-athletes, so this study will be among the first to go beyond psychosocial outcomes and assess changes in key CD behaviors. According to the WMACD, the intervention should increase CD behaviors, but the relationship between the intervention and behavioral outcomes may be mediated and/or moderated by several psychosocial and contextual variables.

Mediators and Moderators of Psychosocial and Behavioral Outcomes

Due to the exploratory nature of this study, the WMACD predicts that several psychosocial variables can function both as outcomes and mediators, even though a previous manuscript examining intervention effectiveness used these variables strictly as outcomes.

Psychosocial Mediators

Several of the psychosocial variables identified in the WMACD were predicted to act as mediators of psychosocial and behavioral outcomes. Specifically, it was hypothesized that career decision-making self-efficacy, more self-determined motivation, and coping would mediate the relationship between the intervention and the behavioral CD outcomes. Stated differently, the psychosocial variables (i.e., self-efficacy, self-determined motivation, and change-event coping) should help to better explain the existing relationship between the intervention and targeted outcome variables (i.e., mediation).

Career decision-making self-efficacy. Bandura (1977, 1986) coined the term self-efficacy and described it as beliefs concerning the ability to successfully perform a given task or behavior. Bandura also considered self-efficacy to be a precursor of behavior and behavior change, particularly from a clinical perspective. The Career Decision-Making Self-Efficacy Scale (Taylor & Betz, 1983; CDMSES) was the first inventory used to measure career decision-making self-efficacy and has become the most widely used measure of career decision-making self-efficacy in the research literature (see Gaudron, 2011). Increased career decision-making self-efficacy has been linked to lower career indecision (Betz, Klein, & Taylor, 1996; Betz & Serling, 1995; Taylor & Betz, 1983), improved career certainty (Betz et al., 1996; Betz & Serling, 1995), increased vocational identity (Betz et al., 1996), lower fear of commitment (Betz & Serling, 1995), greater career maturity (Luzzo, 1995), increased career

exploration (Betz & Serling, 1995), enhanced satisfaction with academic major selection (Komarraju et al., 2014) and increased career motivation (Komarraju et al., 2014). Career development interventions have been shown to effectively increase levels of career decision-making self-efficacy for college-aged students (Sullivan & Mahalik, 2000; Reese & Miller, 2006) and veterans (Gati, Ryzhik, & Vertsberger, 2013). Other examples of the success of CD interventions can be found throughout the literature (see Dillinger & Landrum, 2002; Fouad, Cotter, & Kantamneni, 2006 for further examples). The WMACD's first hypothesis predicts that the CD intervention used in this study would enhance career decision-making self-efficacy, which in turn would act as a mediator of the relationship between the intervention and a range of psychosocial and behavioral outcomes.

Self-determined motivation. Deci and Ryan (1985) first put forward Self-Determination Theory (SDT) as a way to understand the process of intrinsic versus extrinsic motivation. They hypothesized that satisfaction of three psychological needs (i.e., competence, autonomy, and relatedness) increases an individual's self-determined motivation for a task. Additionally, Deci and Ryan's SDT proposed that self-determination occurred on a continuum from amotivation (i.e., no motivation at all) to intrinsic motivation (i.e., motivated by purely internal reasons without external influence). The more psychological needs that are fulfilled, the more self-determined motivation would become, shifting from amotivation through four types of extrinsic motivation (i.e., external regulation, introjected regulation, identified regulation, and integrated regulation) to intrinsic motivation (Deci & Ryan, 1985).

Komarraju and colleagues (2014) found that undergraduate students who were more confident about obtaining career-relevant information and solving career-related problems were more intrinsically motivated. They also identified career decision-making self-efficacy

as a predictor of self-determined motivation, and that the relationship between career decision-making self-efficacy and self-determined motivation was mediated by perceived gain in knowledge about CD. Furthermore, Betz and Klein (1996) suggested that interventions that targeted improving both career decision-making self-efficacy and competence would result in greater improvements to career outcomes.

Although the research on motivation as a CD outcome with student-athlete populations is sparse, Hypothesis 2 predicts that a CD intervention would enhance levels of autonomy and competence, resulting in an increase in self-determined forms of motivation (i.e., identified regulation, integrated regulation, and intrinsic motivation). Furthermore, increased intrinsic motivation for CD may mediate the relationship between the intervention and the behavioral outcomes. Hence, the various forms of self-determined motivation were examined as mediators of the behavioral outcomes in this study.

Coping. Stambulova's (1994, 2003) athletic career transition model is the most widely used model applied to athletes going through career transitions. Stambulova's model (1994, 2003) identifies the final career transition (i.e., retirement from sport) as a process of coping with a set of specific demands/challenges that is necessary for adjusting to post-career life. Samuel and Tenenbaum (2013) also indicated that athletes' decision-making abilities are affected by availability of support and their perceived control over the change-event. Thus, educating athletes on change-events (e.g., retirement), teaching athletes coping strategies, and providing athletes with knowledge of resources available to them can enhance their ability to deal with change and make good decisions, thus enhancing CD (Samuel & Tenenbaum, 2013). According to the WMACD, the third hypothesis predicts that the CD intervention will

enhance student-athlete coping skills, and change-event coping will act as a mediator of how the intervention influences key outcome variables.

Contextual Moderators

According to the WMACD, in addition to the psychosocial variables that will act as mediators, several contextual variables may serve as moderators of CD intervention outcomes. Moderation suggests that contextual variables (i.e., stage of change and intervention engagement) may change the strength or direction of the relationship between the intervention and important outcome variables. Both behavioral and psychosocial outcomes could experience moderation based on where student-athletes are in the behavior change process and/or how engaged they are in the intervention itself.

Stage of change. The Stages of Change (SOC) Model suggests five major stages of change that individuals go through when experiencing behavior/life change and has been used in previous studies examining life after sport (Prochaska, DiClemente, & Norcross, 1992; Park, Tod & Lavalley, 2012). The five stages of change are (a) pre-contemplation (i.e., individuals do not consider any change in behavior), (b) contemplation (i.e., individuals are aware of a need to change their behavior), (c) preparation (i.e., individuals get ready to take action), (d) action (i.e., individuals engage in behavior change), and (e) maintenance (i.e., individual behavior change lasts for longer than 6 months and becomes a habit). The stages do not necessarily progress in a linear fashion and relapse to a previous stage can occur. Finally, SOC seems to identify where individuals are in the change process and indicate their readiness to actually make meaningful change. Thus, individuals in pre-contemplation have lower probability of making effective change compared to those in the action stage.

Park and colleagues (2012) found that athletes discussed their retirement from sport in the context of the first four stages (i.e., pre-contemplation, contemplation, preparation, action). Park et al. (2012) concluded that proactive interventions early in athletes' career would be an effective strategy to assist them with the transition to life after sport because early intervention could help athletes move through the stages of change towards a new pattern of behavior more quickly. For Hypothesis 4, the WMACD predicts that a student-athlete's current SOC will be a moderator of intervention outcomes. In other words, a student-athlete's current SOC may impact the relationship between the intervention and targeted outcomes. It seems logical that athletes who have progressed to the later stages of behavior change (i.e., action and maintenance) will have increased CD behaviors as a result of the intervention compared to athletes who are in the earlier stages of change (i.e., pre-contemplation, contemplation, and preparation).

Intervention Engagement. 'Engagement' is a term that describes when and how fully participants commit to an intervention and embrace its goals. Highly engaged participants engage fully on day one of the intervention and work hard to attain targeted outcomes, whereas their less engaged counterparts may only partially pursue intervention goals and only after weeks of just going through the motions. According to the WMACD's fifth hypothesis, participants' level of engagement with the intervention may also function as a moderator of the relationship between the intervention and the behavioral outcomes. Previous research (Conley, Travers, & Bryant, 2013) has shown that intervention engagement predicted beneficial outcomes for first year college students participating in a psychosocial wellness seminar. It seems logical that participants who are more engaged in the intervention will see increased CD behavior compared to their less engaged counterparts. Hence, the fifth

WMACD hypothesis predicts that intervention engagement will be a moderator of intervention outcomes.

Method

Design and Participants

This study used a quasi-experimental pretest-posttest design to assess the impact of a 6-week long CD intervention on selected psychosocial and behavioral outcomes and examine the relationship between the psychosocial and behavioral variables. Treatment (i.e., participants who received the intervention) and control (i.e., participants receiving no intervention exposure) groups were used to investigate intervention effectiveness. All participants were a convenience sample of volunteers, and a matching process that focused on educational experience and sport type was used to ensure similarity between groups. Participants ($M age = 20.03$) played collegiate sports including cross country, basketball, football, golf, soccer, swimming, track and field, and volleyball and had an average of 9.49 years competitive playing experience in their respective sports. The student-athletes in this study were evenly split between male ($N = 17$) and female ($N = 19$), and a majority identified as white ($N = 24$) with seven identifying as black, one as Asian, and four as other.

Both the treatment and control groups were comprised of 18 NCAA Division I athletes from a university in the Northwestern United States. Initially, a treatment group comprised of nine juniors and seniors was matched with a control group of ten upperclassmen. Subsequently, a second treatment group comprised of nine freshman and sophomore student-athletes was matched with a control group of eight freshman and sophomore teammates after the initial treatment group did not garner enough interested participants.

Instruments

Seven self-report inventories were completed by participants. Athletes in the treatment group also completed the Career Development Intervention Effectiveness Survey (CDIES) to assess intervention effectiveness, user-friendliness, and take-home project completion following study conclusion.

Collegiate Athlete Life after Sport Demographic Questionnaire (CALSDQ). The CALSDQ was created for this study to obtain basic demographic information (i.e., 7-items) about participants age, gender, ethnic background, year in school, declared major, and sport experience (e.g., sport type and years of playing experience).

Career Decision-Making Self-Efficacy Scale Short Form (CDMSES-SF). Betz and colleagues (1996) developed the CDMSES-SF to measure individuals' belief that they can successfully complete the tasks necessary for making career decisions. The 25-item measure is based on the original 50-item CDMSES (Taylor & Betz, 1983) and is comprised of five 5-item subscales based on Crites's (1978) career maturity model, including: (a) accurate self-appraisal (b) gathering occupational information, (c) goal selection, (d) making future plans, and (e) problem solving. The researchers (Betz et al., 1996) chose to use the total score as an indicator of total career decision-making self-efficacy due to the small sample size used in this study. A sample item from the CDMSES-SF is, "How confident are you that you could determine what your ideal job would be?" Respondents rate their confidence on a 5-point Likert-type scale ranging from 1 (*no confidence at all*) to 5 (*complete confidence*), with higher scores indicative of greater levels of career decision self-efficacy (Betz, Hammond, & Multon, 2005).

Betz and colleagues (1996, 2005) have reported acceptable levels of internal consistency for the 5-factor model. Furthermore, high test-retest reliability and structural validity evidence for a four-factor CDMSES-SF has been shown in the literature (Buyukgoze-Kavas, 2014; Gaudron, 2011), as well as convergent validity in the form of theoretically interpretable correlations with a measure of generalized self-efficacy (Buyukgoze-Kavas, 2014).

Change-Event Inventory (CEI). Samuel and Tenenbaum (2011) developed the CEI to measure athletes (a) experience of change-events, (b) perception of and reaction to a single change-event, (c) decision-making, and (d) availability of helping resources. For this study only the last section (i.e., 32 items) of the four-section instrument was used to examine one single change-event (i.e., retirement from sport) for participants who had not yet experienced the change-event because they were all current student-athletes. A sample item from the CEI is “Please indicate for each of the following to what degree did you feel that consulting the person was helpful in coping with this event?” (i.e., Family was the first of the ten specific people or groups respondents reacted to). Respondents were asked to rate each coping resource on a 7-point Likert-type scale ranging from 1 (*very unhelpful*) to 7 (*very helpful*).

Samuel and Tenenbaum (2011) have demonstrated acceptable levels of internal consistency for the items of the CEI. Additionally, concurrent validity has been established through theoretically interpretable relationships with athlete identity (see Samuel & Tenenbaum, 2011 for a detailed overview of the psychometric properties of the CEI).

Sport Motivation Scale-6-Career Development (SMS-6-CD). Mallett, Kawabata, Newcombe, Otero-Forero, and Jackson (2007) developed the SMS-6 to measure motivation toward sport. In order to measure motivation to engage in CD rather than sport behaviors,

items were modified slightly to fit this study. The resulting SMS-6-CD retains the 6-factor structure of the original instrument starting with the stem, "Why do you engage in career development activities?" followed by 4 items per subscale relating to amotivation (e.g., "I don't seem to be enjoying my career as much as I previously did."), external regulation (e.g., "To show others how good I am in my career field."), introjected regulation (e.g., "Because I must engage in my career regularly."), identified regulation (e.g., "Because career development will improve my career options."), integrated regulation (e.g., "Because participation in my career is an integral part of my life."), and intrinsic motivation (e.g., "For the pleasure of discovering new career strategies and tools."). Respondents rate the extent to which each item corresponds to reasons why they engage in CD behaviors on a 7-point Likert-type scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*).

Mallet and colleagues (2007) demonstrated acceptable levels of internal consistency for each SMS-6 subscale. Additionally, concurrent validity evidence has been shown in the form of theoretically interpretable correlations with a measure of flow, while confirmatory factor analysis supported the 6-factor structure of the instrument (see Mallett et al., 2007 for a psychometric review of the SMS-6).

Career Development Behaviors Survey (CDBS). For the purpose of this study, this 16-item self-report inventory was created to ask participants to identify their current levels of engagement in certain common career behaviors. The CDBS is conceptualized as three dimensions (i.e., 5-items each) in order to assess participants' knowledge of career behaviors (CBknowledge; i.e., "I know how to create a strong resume."), future plans for career behaviors (CBplanning; i.e., "I am actively planning to create a strong resume."), and completion of career behaviors (CBcompletion; i.e., "I have successfully created a strong

resume.”). Additionally, the scores on each category (i.e., CBknowledge, CBcompletion, and CBplanning) were averaged for a total CD behavior score (CBtotal). Respondents rate the extent to which they agree with each item on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Current stage of change in regard to CD behaviors was also assessed in the CDBS at both pre- and post-test.

Participant intervention engagement. Level of engagement during the group sessions was recorded by the primary researcher after each session for each participant. Participants were scored on a 5-point Likert-type scale ranging from 1 (*Not engaged at all*) to 5 (*Highly engaged*). The scores were averaged across all the group sessions for a total intervention engagement score.

Procedure

The procedure is separated into two sections specifically addressing (a) the protocol for the intervention and (b) the protocol for assessing intervention effectiveness.

Intervention protocol. For the treatment group, the CD intervention was comprised of six group meetings over three weeks and one individual meeting with each participant. Generally each session contained three main foci including: (a) specific learning objectives related to the topic, (b) topic-relevant resources for each participant to utilize, and (c) specific take-home projects used to further explore the session’s topic.

Mental tools and skills training has been broken into three primary phases (i.e., Education, Acquisition, and Implementation) that lead to learning and mastering new tools and skills (Burton & Raedeke, 2008). The Education Phase was completed through discussion-based lectures where the participants engaged in discussion with the group, shared their own CD stories, and asked questions of the facilitator for clarification and further

exploration. Furthermore, supplemental worksheets and handouts on CD and sport psychology topics contributed to the Education Phase and allowed the participants to begin to practice what they were learning (i.e., Acquisition Phase).

Individual meetings were structured to enhance acquisition of the participants' CD behaviors and focused on using the material from the workshops, discussing individual goals, identifying and developing tools to accomplish those goals, and providing student-athletes with support in their life after sport decision-making process on an individual level. Individual sessions were tailored to the specific needs of each participant. The Implementation Phase was addressed through take-home challenges given after each group session and provided participants with the opportunity to apply the skills they had learned and practiced.

To continue participant growth and enhance implementation of the CD skills, a "community of learners" (COL) group met once a week for a 6-week follow-up period after the primary intervention. These follow-up sessions were structured as a peer-support group that gave participants a social support group and allowed them to address specific questions they had as they implemented CD behaviors. Goal setting, relaxation, self-talk, motivation, self-confidence, and stress management were each discussed in the context of CD during different sessions to further enhance the participants' ability to apply sport-related tools and skills to CD topics. Group discussion during the intervention resulted in approximately five percent deviation from directly planned topics, but additional discussion topics were still related to career development and/or mental tools and skills.

Assessment of intervention effectiveness. Upon Institutional Review Board approval, volunteer student-athletes were recruited from the athletic department. Written informed consent was obtained from all student-athletes prior to completing any surveys.

Surveys were distributed at three separate times (i.e., pre-intervention, post-intervention, and post-follow-up COL meetings) for the treatment group, and two times (i.e., pre-intervention and post-intervention) for the control group. Both treatment groups (i.e., freshman/sophomore and junior/senior) participated in the “community of learners” meetings, but due to time constraints, the freshman/sophomore group only had two weeks of meetings compared to six weeks for the junior/senior group. The control group was given the opportunity to attend the intervention training program upon completion of the initial intervention. E-mail addresses for the participants were also collected for potential multi-year follow-up. All surveys were taken in-person and took approximately 15 minutes to complete.

Data Analysis

Data analysis was separated into (a) mediation analysis and (b) moderation analysis to examine the WMACD and how the psychosocial variables interacted with behavioral outcomes and other psychosocial outcomes. Data was screened for potential univariate and multivariate outliers in the variables of interest. None were found, so all participants’ data was included in the analysis.

Mediation analysis. In order to examine support for the WMACD and whether hypothesized relationships between the intervention and the behavioral outcomes were mediated by psychosocial factors, a classic regression approach was used. Four conditions using three regression equations must be met to test the potential for mediation (Baron & Kenny, 1986; MacKinnon, Cheong, & Pirlott, 2012). The first regression equation (i.e., regressing the mediator on the independent variable) must meet Condition 1 (C1): the independent variable (i.e., intervention) must significantly affect the mediator (i.e., psychosocial variable) in the first regression equation. The second regression equation (i.e.,

regressing the dependant variable on the independent variable) must meet Condition 2 (C2): the independent variable must significantly affect the dependant variable (i.e., behavioral outcomes) in the second regression equation. The third regression equation (i.e., regressing the dependant variable on both the independent variable and on the mediator) must meet Condition 3 (C3): the mediator must significantly affect the dependant variable in the third regression equation. For Condition 4 (C4) to be satisfied the effect of the independent variable on the dependant variable must be less in the third equation than the second. The statistical significance of C4 can be computed using the following equation: Sobel test statistic = $a*b/\text{SQRT}(b^2*s_a^2 + a^2*s_b^2)$ where the numerator is the product of the first two regression coefficients, and denominator is calculated using the second and third regression coefficients and their respective standard errors (Sobel, 1982). Partial mediation (i.e., the mediator explains some of the relationship between the independent and dependant variable) is indicated by a significant R^2 change value in the third regression equation. Full mediation (i.e., the mediator explains all of the relationship between the independent and dependant variable) is indicated by a non-significant R^2 change value in the third regression equation.

Moderation analysis. To determine if the two contextual variables in the WMACD were moderators of study outcomes, repeated-measures ANOVA's were used following the suggestions of Baron and Kenny (1986). Dichotomous variables were created from the potential moderator variables forming low-score and high-score groups for each variable of interest. The groups were formed by splitting a frequency distribution of the scores into high and low-score groups, such that the group size was as even as possible between the two groups. ANOVA's were then conducted to test for an interaction effect between time and the potential moderator on the behavioral outcomes. A significant interaction between the

intervention (i.e., time) and the potential moderator (i.e., the created dichotomous variable) indicates that the dichotomous variable does moderate the relationship between the intervention and the behavioral outcome being examined (Baron & Kenny, 1986).

Cluster analysis. Clusters based on self-determined motivational profiles were created to examine whether different motivational profiles were impacted differently by the intervention. K-Means cluster analysis was used to create the clusters based on the six types of self-determined motivation as measured by the SMS-6-CD (i.e., amotivation, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic motivation). Repeated-measures ANOVA's were then run using the cluster groups as the between-subjects independent variable to examine differences between the cluster profiles on intervention psychosocial and behavioral outcomes.

Results

Mediation Results

Due to the exploratory nature of this study, each variable was examined as a potential mediator and outcome in order to determine how the intervention impacted each of the different potential outcomes and whether those relationships were mediated by the other variables. Bivariate correlations were calculated for each variable of interest to ensure that the classic regression approach could be used (see Table 1). Additionally, all four conditions required for mediation analysis were met for each significant mediator (see Figure 2 for an example). Tables 2, 3, and 4 show the magnitude of the mediating effect, the results of the Sobel test for significance of mediation, the shared variance between the intervention and each outcome variable (i.e., R^2), and the shared variance between the intervention and each outcome variable when the mediator is taken into account (i.e., R^2 change).

Results indicate that career decision-making self-efficacy significantly mediated the relationship between the intervention and seven psychosocial variables (i.e., intrinsic motivation, integrated regulation, identified regulation, introjected regulation, external regulation, amotivation, and coping) and four behavioral variables (i.e., CBknowledge, CBplanning, CBcompletion, and CBtotal). Identified regulation, amotivation, and CBknowledge were all partially mediated by career decision-making self-efficacy, while intrinsic motivation, integrated regulation, introjected regulation, external regulation, coping, CBplanning, CBcompletion, and CBtotal were all fully mediated by career decision-making self-efficacy. Additionally, effect sizes for each mediated relationship were moderate to strong in magnitude (see Table 2).

Integrated regulation also functioned as a significant mediator between the intervention and five psychosocial outcome variables (i.e., career decision-making self-efficacy, intrinsic motivation, identified regulation, introjected regulation, and external regulation) and two behavioral outcomes (i.e., CBknowledge and CBtotal). Identified regulation and CBknowledge were partially mediated by integrated regulation, while career decision-making self-efficacy, intrinsic motivation, introjected regulation external regulation, and CBtotal were all fully mediated by integrated regulation. Effect sizes also ranged from moderate to strong in magnitude (see Table 3).

Similarly, identified regulation was found to be a mediator between the intervention and four psychosocial outcomes (i.e., career decision-making self-efficacy, intrinsic motivation, introjected regulation, and external regulation) and three behavioral outcomes (i.e., CBknowledge, CBplanning, and CBtotal). CBknowledge was partially mediated by identified regulation, while career decision-making self-efficacy, intrinsic motivation,

introjected regulation, external regulation, CBplanning, and CBtotal were all fully mediated by identified regulation. Moderate to strong effect sizes were again found for each mediating effect (see Table 4).

Moderation Results

Similar to the mediation analysis, pre-test scores for each contextual variable of interest (i.e., stage of change, engagement, year in school, and gender) was examined as a potential moderator of the direct relationship between the intervention and the targeted outcomes. Only intervention engagement was found to be significant moderator, while SOC, year in school, and gender were not.

Table 5 shows the results of repeated-measures ANOVA's examining differences between low versus high engagement groups on selected outcomes. The significant interaction effects (Baron & Kenny, 1986) for group by time indicates that intervention engagement functioned as a significant moderator of the relationship between the intervention and external regulation ($F(1,15) = 8.22, p < .01, \text{partial } \eta^2 = .35$) and intrinsic motivation ($F(1,15) = 5.58, p < .05, \text{partial } \eta^2 = .27$). In other words, student-athletes who were more engaged with the intervention reported higher levels of external regulation and intrinsic motivation for CD than did their counterparts who were less engaged.

Cluster Analysis Results

Following K-Means cluster analysis of the six pre-intervention self-determined motivation subscales, two theoretically meaningful clusters were identified (see Figure 3). Cluster 1 demonstrates scores above the mean on intrinsic motivation and all extrinsic motivation subscales while the amotivation score fell below the mean. Cluster 1 was labeled "functional motivation". Cluster 2 revealed the opposite pattern with amotivation above the

mean and below the mean scores on all extrinsic motivation subscales and intrinsic motivation. Cluster 2 was labeled “dysfunctional motivation”. In other words, it appears that Cluster 1 ($n = 4$) was more highly and diversely motivated toward CD behaviors before the intervention, whereas Cluster 2 ($n = 13$) was much less motivated to engage in CD behaviors prior to the intervention. Repeated-measures ANOVA results comparing psychosocial and behavioral outcomes across the two profiles (see Table 6) demonstrated significant interaction effects for five variables including: (a) career decision-making self-efficacy ($F(1,15) = 15.65$, $p < .001$, partial $\eta^2 = .51$), (b) CBknowledge ($F(1,15) = 10.55$, $p < .01$, partial $\eta^2 = .41$), (c) CBcompletion ($F(1,15) = 5.79$, $p < .05$, partial $\eta^2 = .28$), (d) CBtotal ($F(1,15) = 8.13$, $p < .01$, partial $\eta^2 = .35$), and (e) negative emotions ($F(1,15) = 4.34$, $p < .05$, partial $\eta^2 = .23$). Interestingly, even though the student-athletes in Cluster 2 had lower motivation towards CD to begin the intervention, they demonstrated greater gains in career decision-making self-efficacy, CBknowledge, CBcompletion, and CBtotal compared to their Cluster 1 counterparts. Additionally, negative emotions towards life after sport decreased more for Cluster 2 than Cluster 1 following the intervention.

Discussion

The primary purpose of this study was to examine the role that psychosocial factors play in a CD intervention targeted at student-athletes. Specifically, the major research question was whether psychosocial factors would act as mediators and contextual variables as moderators of targeted intervention outcomes. Three different significant mediators and one moderator were identified as influencing intervention effectiveness.

Psychosocial Mediators of CD Intervention Effectiveness

Career decision-making self-efficacy, integrated regulation, and identified regulation acted as mediators between the intervention and several of the study's targeted outcome variables. Athletes' change on specific study outcomes as a result of the intervention was significantly mediated by improvement in career decision-making self-efficacy, integrated regulation, and/or identified regulation.

Career decision-making self-efficacy. The first WMACD hypothesis predicted that career decision-making self-efficacy would act as a mediator between the intervention and targeted study outcomes. The results support this hypothesis for several of the outcome variables (see Table 2). Specifically, career decision-making self-efficacy mediated the relationship between the intervention and intrinsic motivation, integrated regulation, identified regulation, introjected regulation, external regulation, amotivation, coping, CBknowledge, CBplanning, CBcompletion, and CBtotal. In other words, the increase in each of the above mentioned outcomes as a result of the intervention is partially or fully explained by an increase in career decision-making self-efficacy. This finding supports previous research (Fouad et al., 2006; Gati et al., 2013; Reese & Miller, 2006) that indicates career decision-making self-efficacy plays an important role in the effectiveness of CD interventions. Additionally, this study demonstrates that career decision-making self-efficacy is a mediator of behavioral outcomes. This finding suggests that interventions should focus on enhancing career decision-making self-efficacy in order to gain the most positive impact on intervention-driven behavioral outcomes. Furthermore, career decision-making self-efficacy also mediated the relationship between the intervention and each form of motivation on the self-determination continuum (i.e., amotivation, external regulation, introjected regulation,

identified regulation, integrated regulation, and intrinsic motivation) as well as coping. These results suggest that enhancing career decision-making self-efficacy in a CD intervention will increase self-determined motivation towards career behaviors and enhance participants' ability to cope with the transition to life after sport. More importantly, Hirschi and Freund (2014) found that individuals with higher levels of perceived social support (i.e., a component of coping) in a given week had increased levels of career engagement compared to when they perceived lower levels of social support. The results of this study indicate that coping can be enhanced by increasing career decision-making self-efficacy during an intervention, which would hopefully lead to increased career engagement as well.

Identified regulation and integrated regulation. The WMACD's second hypothesis predicted that self-determined motivation would function as a mediator between the intervention and targeted study outcomes. Results partially support this hypothesis as the two most self-determined forms of extrinsic motivation (i.e., identified regulation and integrated regulation), but not intrinsic motivation, were identified as mediators between the intervention and several study outcomes (see Tables 3 and 4). Specifically, identified regulation and integrated regulation acted as mediators for psychosocial outcomes such as career decision-making self-efficacy, external regulation, introjected regulation, and intrinsic motivation as well as behavioral outcomes such as CBknowledge and CBtotal. Additionally, identified, but not integrated, regulation acted as mediator for CBplanning. In other words, it appears that CD interventions' impact on less self-determined forms of extrinsic motivation (i.e., external regulation and introjected regulation), intrinsic motivation, knowledge about CD tasks (i.e., CBknowledge), and overall CD behavior (i.e., CBtotal) can be explained by the more self-determined forms of extrinsic motivation (i.e., identified regulation and integrated regulation).

Similar to career decision-making self-efficacy, CD interventions that enhance identified and integrated regulation may improve extrinsic motivation, intrinsic motivation, and participants' career behaviors. These findings expand on the research of Komarraju and colleagues (2014) who found links between career decision-making self-efficacy and self-determined motivation by showing that an intervention that improves self-efficacy and motivation can also enhance CD behaviors. Interestingly, intrinsic motivation was not found to be a mediator between the intervention and study outcomes. One possible explanation for this could be that the intervention simply was not long enough to change intrinsic motivation towards CD. A longer duration intervention or greater follow-up may increase the likelihood that intrinsic motivation is found to be a mediator as well.

Coping. The third hypothesis of the WMACD predicted that coping would act a mediator between the intervention and targeted study outcomes. No support was found for this hypothesis, as coping was not a significant mediator for any of the psychosocial or behavioral outcomes in this study. This could be due to the nature of the instrument used to measure coping. The CEI was designed to measure how an athlete copes with a change event after the event has taken place, however the student-athletes in this study has not yet been through the change event (i.e., the end of their sport career). Further research using different measures of coping are suggested to fully determine the role that coping plays during a CD intervention.

Moderators of CD Intervention Effectiveness

The WMACD hypothesized that gender, year in school, stage of change and/or intervention engagement may function as moderators of the relationship between the

intervention and targeted study outcomes. Results suggest that intervention engagement does indeed act as a moderator variable, but gender, year in school, and stage of change do not.

Stage of change. Although the WMACD's fourth hypothesis predicted that stage of change would moderate the relationship between the intervention and targeted study outcomes, it was not found to be a significant moderator. No significant differences between participants who started the intervention in an early SOC (i.e., pre-contemplation, contemplation, and preparation) compared to those who started in a later SOC (i.e., action and maintenance) were found on the targeted outcome variables. In other words, participants who began the intervention in an early SOC demonstrated the same benefits in CD behavior as those who started the intervention in a later SOC. This suggests that regardless of the initial SOC, student-athletes benefit from a targeted CD intervention.

Intervention Engagement. The fifth WMACD hypothesis predicted that intervention engagement would moderate the relationship between the intervention and targeted study outcomes. Results supported this hypothesis for some of the study outcomes. Student-athletes who were more engaged during the intervention (i.e., high engagement) were found to have higher scores on external regulation and intrinsic motivation than were their less engaged counterparts (i.e., low engagement: see Table 5). This finding identifies engagement as a moderator of the relationship between the intervention and both external regulation and intrinsic motivation. Engagement with the intervention positively impacts the effectiveness of intervention on extrinsic (i.e., external regulation) and intrinsic motivation. Participants that are highly engaged are more likely to experience enhanced motivation towards CD as a result of the intervention. This emphasizes the importance of keeping CD interventions engaging as has been identified in previous intervention research (Conley et al., 2013). It is worth noting

that in this study overall engagement was very high ($M = 4.77$). This may be due to the intervention being specifically targeted to student-athletes and that all participants volunteered to be in the study.

Impact of Self-Determined Motivation Profiles on Intervention Outcomes

Two meaningful cluster profiles were created that represented patterns of functional and dysfunctional motivation profiles for CD intervention student-athletes (see Figure 3). Most of the intervention participants ($n = 13$) were categorized into the dysfunctional profile that was low in motivation toward CD before the intervention. Only four participants in the intervention group were classified into the functional profile who reported high initial motivation before the intervention. Interestingly, the student-athletes who began the intervention with low motivation toward CD behaviors experienced significantly greater improvement in career decision-making self-efficacy, CBknowledge, CBcompletion, CBtotal, and negative emotions compared to their more functional counterparts. Specifically, negative emotions towards life after sport decreased more for the dysfunctional than the functional profile. This finding suggests that a CD intervention targeted to student-athletes can be effective regardless of the student-athletes' motivation toward CD prior to the intervention. It is worth noting that finding volunteer participants for the intervention group was challenging, indicating that perhaps most student-athletes are not particularly motivated about CD. This finding makes these results particularly relevant, suggesting that a CD program developed and implemented on a wide scale should be effective for most student-athletes regardless of prior motivation.

Limitations

The primary limitation for this study was a low number of participants (i.e., 18 treatment and 18 control participants). A larger sample size would allow more in-depth statistical analysis to be conducted and greater confidence in the results. Participant numbers were limited due to conflicts with student-athletes busy athletic and academic schedules.

Additionally, the length of the intervention (i.e., 9 weeks for junior/senior; 5 weeks for freshman/sophomore) may not have been long enough to see changes in intrinsic motivation and behavioral outcomes. A multi-year follow-up study is planned to examine the long-term effects of the intervention on student-athletes transition to life after sport, and these retrospective data may provide another perspective on intervention effectiveness and retention of results.

Implications and Future Research

Understanding how different psychosocial variables mediate and moderate CD intervention outcomes should help to shape how interventions are developed and implemented for student-athletes in the future. Ensuring that interventions help student-athletes to enhance critical mediating factors (e.g., career decision-making self-efficacy, identified regulation, and integrated regulation) should enhance the behavioral outcomes. Additionally, moderating factors such as intervention engagement can be addressed both during and prior to direct interventions. Research is also needed to examine how much impact early education and training has on future interventions and on student-athlete transitions to life after sport. Future studies focusing on longer duration interventions, multi-year follow-up, and early interventions (e.g., freshman/sophomore year) would greatly enhance our understanding of how best to help student-athletes handle the transition to life after sport.

References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*, 191-215.
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182. doi: 0022-3514/86/\$00.75
- Betz, N. E., Hammond, M. S., & Multon, K. D. (2005). Reliability and validity of five-level response continua for the Career Decision Self-Efficacy Scale. *Journal of Career Assessment*, *13*, 131-149.
- Betz, N. E., Klein, K., & Taylor, K. M. (1996). Evaluation of a short form of the Career Decision-Making Self-Efficacy Scale. *Journal of Career Assessment*, *4*, 47-57.
- Betz, N. E., & Serling, D. (1995). *Fear of commitment and career decision-making self-efficacy*. Unpublished manuscript, Department of Psychology, Ohio State University.
- Brown, S. D., Ryan-Krane, N. E., Brecheisen, J., Castelino, P., Budisin, I., Miller, M., & Edens, L. (2003). Critical ingredients of career choice interventions: More analyses and new hypotheses. *Journal of Vocational Behavior*, *62*, 411-428.
doi:10.1016/S0001-8791(02)00052-0
- Burns, G., Jasinski, D., Dunn, S., & Fletcher, D. (2013). Academic support services and career decision-making self-efficacy in student athletes. *Career Development Quarterly*, *61*, 161-167. doi: 10.1002/J.2161 -0045.2013.00044.x

- Burton, D., & Raedeke, T. (2008). *Sport psychology for coaches*. Champaign, IL: Human Kinetics.
- Buyukgoze-Kavas, A. (2014). A psychometric evaluation of the Career Decision Self-Efficacy Scale-Short Form with Turkish university students. *Journal of Career Assessment, 22*, 386-397. doi: 10.1177/1069072713484561
- Conley, C. S., Travers, L. V., & Bryant, F. B. (2013). Promoting psychosocial adjustment and stress management in first-year college students: The benefits of engagement in a psychosocial wellness seminar. *Journal of American College Health, 61*, 76-86.
- Crites, J. O. (1978). *Career Maturity Inventory*. Monterey, CA: CTB/McGraw-Hill.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum Press.
- Fouad, N., Cotter, E. W., & Kantamneni, N. (2006). The effectiveness of a career decision-making course. *Journal of Career Assessment, 17*, 338-347. doi: 10.1177/1069072708330678
- Gaudron, J. (2011). A psychometric evaluation of the Career Decision Self-Efficacy Scale – Short Form among French university students. *Journal of Career Assessment, 19*, 420-430. doi: 10.1177/1069072711409713
- Hirschi, A., & Freund, P. A. (2014). Career engagement: Investigating intraindividual predictors of weekly fluctuations in proactive career behaviors. *Career Development Quarterly, 62*, 5-20. doi: 10.1002/j.2161-0045.2014.00066.x

- Irick, E. (2013). Student-athlete participation: NCAA sports sponsorship and participation rates report. Retrieved April 26, 2014, from <http://www.ncaapublications.com/p-4334-1981-82-2012-13-ncaa-sports-sponsorship-and-participation-rates-report.aspx>
- Komarraju, M., Swanson, J., & Nadler, D. (2014). Increased career self-efficacy predicts college students' motivation, and course and major satisfaction. *Journal of Career Assessment, 22*, 420-432. doi: 10.1177/1069072713498484
- Gati, I., Ryzhik, T., & Vertsberger, D. (2013). Preparing young veterans for civilian life: The effects of a workshop on career decision-making difficulties and self-efficacy. *Journal of Vocational Behavior, 83*, 373-385. doi: 10.1016/j.jvb.2013.06.001
- Luzzo, D. A. (1995). The relative contributions of self-efficacy and locus of control to the prediction of career maturity. *Journal of College Student Development, 36*, 61-66.
- MacKinnon, D. P., Cheong, J., & Pirlott, A. G. (2012). Statistical mediation analysis. In H. Cooper (Ed.), *APA handbook of research methods in psychology: Volume 2. Research designs*, (pp. 313-331). Washington, DC: American Psychological Association. doi: 10.1037/13620-018
- Mallett, C., Kawabata, M., Newcombe, P., Otero-Forero, A., & Jackson, S. (2007). Sport Motivation Scale-6 (SMS-6): A revised six-factor sport motivation scale. *Psychology of Sport and Exercise, 8*, 600-614. doi:10.1016/j.psychsport.2006.12.005
- Park, S., Tod, D., & Lavallee, D. (2012). Exploring the retirement from sport decision-making process based on the transtheoretical model. *Psychology of Sport and Exercise, 13*, 444-453. doi:10.1016/j.psychsport.2012.02.003

- Reese, R. J., & Miller, C. D. (2006). Effects of a university career development course on career decision-making self-efficacy. *Journal of Career Assessment, 14*, 252-266. doi: 10.1177/1069072705274985
- Ryan, N. E. (1999). *Career counseling and career choice goal attainment: A meta-analytically derived model for career counseling practice*. Unpublished doctoral dissertation, Loyola University, Chicago.
- Samuel, R. D. & Tenenbaum G. (2011). How do athletes perceive and respond to change-events: An exploratory measurement tool. *Psychology of Sport and Exercise, 12*, 392-406. doi:10.1016/j.psychsport.2011.03.002
- Samuel, R. D., & Tenenbaum, G. (2013). Athletes' decision-making in career change-events. *The Sport Psychologist, 27*, 78-82.
- Stambulova, N. B. (1994). Developmental sports career investigations in Russia: A post-perestroika analysis. *The Sport Psychologist, 8*, 221-237.
- Stambulova, N. (2003). Symptoms of a crisis-transition: A grounded theory study. In N. Hassmen (Ed.), *SIPF yearbook 2003* (pp. 97-109). Orebro: Orebro University Press.
- Stambulova, N. B., Alfermann, D., Statler, T., & Cote, J. (2009). ISSP position stand: Career development and transitions of athletes. *International Journal of Sport and Exercise Psychology, 7*, 395-412.
- Taylor, K. M., & Betz, N. E. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. *Journal of Vocational Behavior, 22*, 63-81.
- Wylleman, P., Alfermann, D., & Lavalee, D. (2004). Career transitions in sport: European perspectives. *Psychology of Sport and Exercise, 5*, 7-20. doi:10.1016/S1469-0292(02)00049-3

Figure 1. Working Model of Athlete Career Development

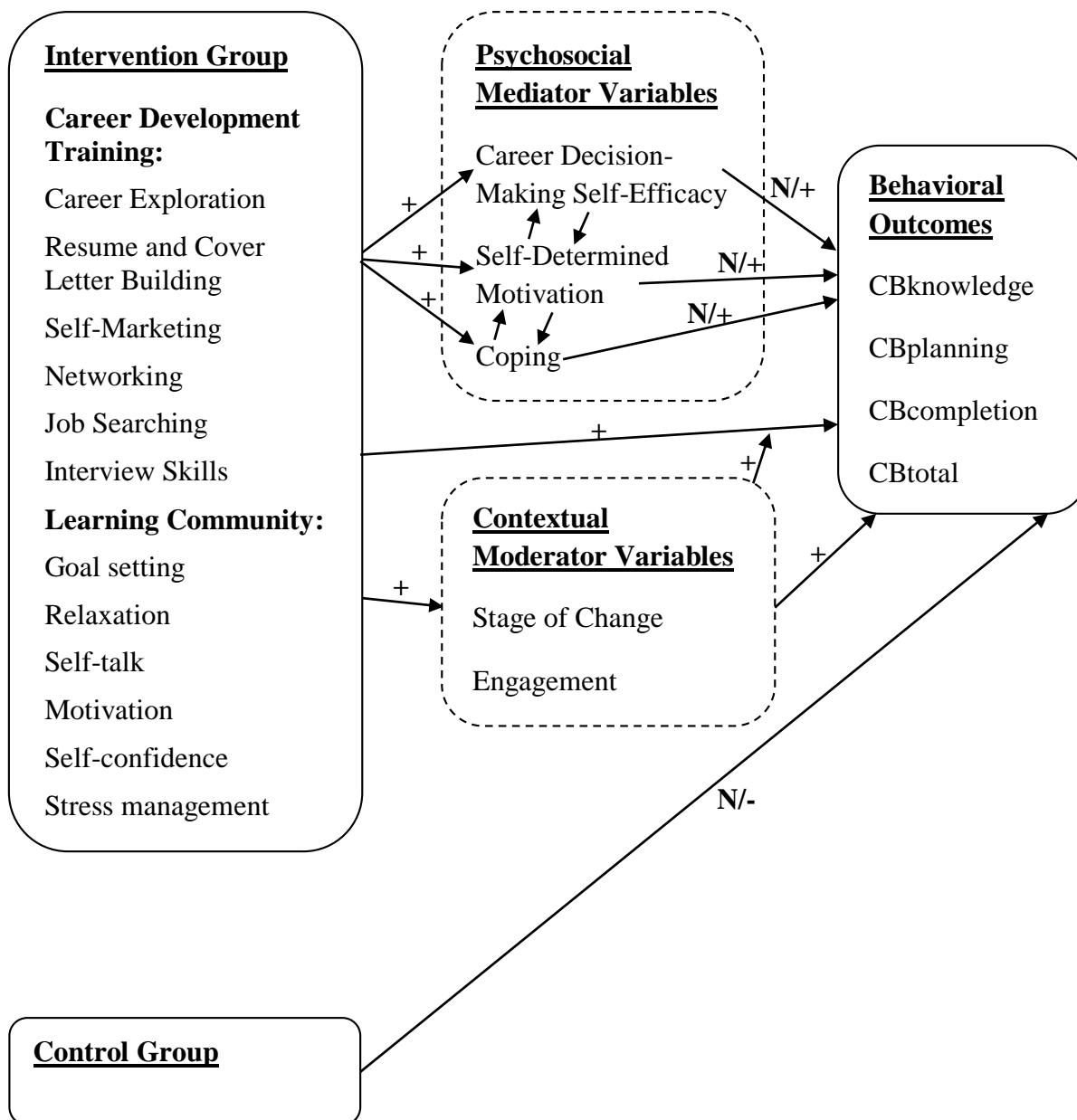
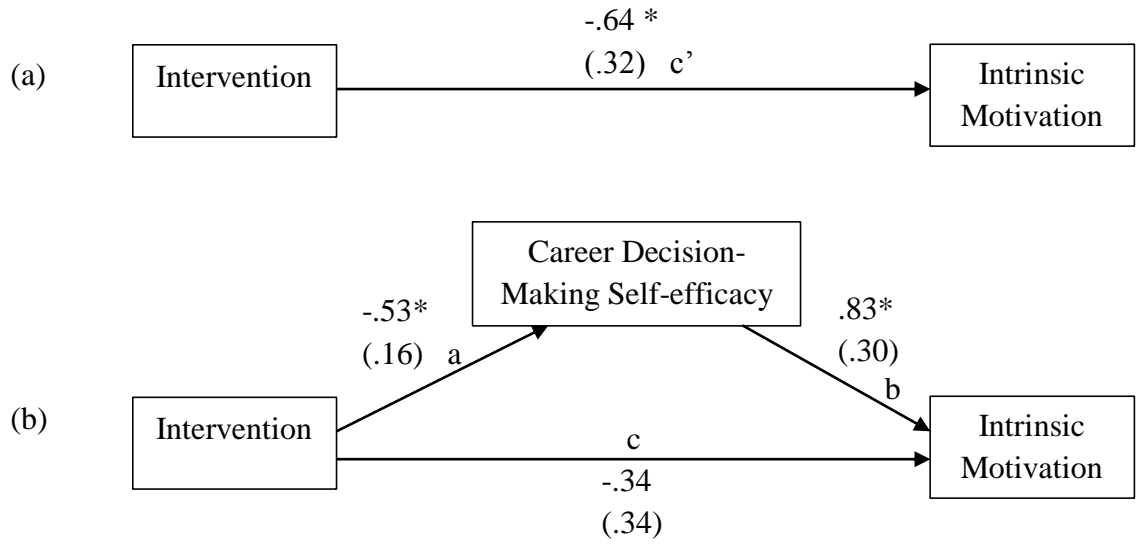


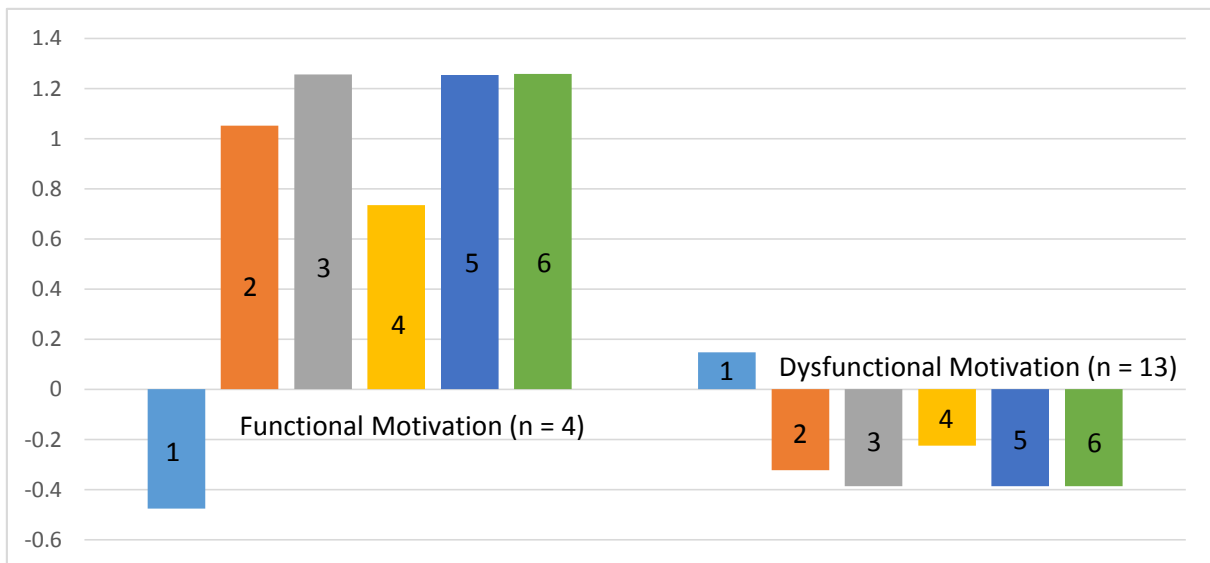
Figure 2. Example to Promote Understanding of How Mediation Analysis Is Conducted



Note. Structural models of (a) unmediated and (b) career decision-making self-efficacy mediated effect of the intervention on intrinsic motivation. Numbers represent regression coefficients, standard errors are in parentheses (* p-values less than .05).

Figure 3. Two-Cluster Profiles of Self-Determined Motivation Subscales at Pre-Test

Assessment



1 = Amotivation

2 = External Regulation

3 = Introjected Regulation

4 = Identified Regulation

5 = Integrated Regulation

6 = Intrinsic Motivation

Table 1. Means, Standard Deviations, and Bivariate Correlations among all Psychosocial, Contextual, and Behavioral Variables at Post-Intervention

Subscale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Career Decision-Making Self-Efficacy	$\alpha=.92$															
2. Amovation	-.41*	$\alpha=.84$														
3. External Regulation	.47**	0.01	$\alpha=.65$													
4. Introjected Regulation	.49**	-0.03	.55**	$\alpha=.55$												
5. Identified Regulation	.71**	-0.3	.68**	.59**	$\alpha=.81$											
6. Integrated Regulation	.55**	-0.20	.64**	.65**	.69**	$\alpha=.64$										
7. Intrinsic Motivation	.44**	-0.25	.59**	.56**	.62**	.60**	$\alpha=.77$									
8. Coping	.45**	-0.34	0.2	0.29	0.3	0.15	0.21									
9. Stage of Change	.46**	-.56**	0.13	0.28	.39*	0.3	0.34	.44**								
10. Positive Emotion	0.31	-0.24	0.34	-0.05	0.34	0.23	0.33	0.15	0.07	$\alpha=.90$						
11. Negative Emotion	-0.03	0.28	0.05	0.22	0.1	0.03	0.16	0.12	0.14	0.02	$\alpha=.87$					
12. CBknowledge	.67**	-0.15	.5**	0.33	.55**	.53**	.44*	0.31	.52**	.35*	0.01	$\alpha=.92$				
13. CBcompletion	.52**	0.05	0.31	0.3	0.25	.41*	0.29	0.23	.40*	0.24	0.18	.68**	$\alpha=.92$			
14. CBplan	.63**	-.38**	.35*	.41*	.63**	.52**	.44**	.5**	.61**	0.25	0.19	.56**	.41*	$\alpha=.97$		
15. CBtotal	.71**	-0.16	.45**	.41*	.54**	.57**	.45**	.39*	.59**	0.33	0.16	.88**	.88**	.74**	$\alpha=.94$	
16. Intervention Engagement	.54*	-0.06	.54*	.61**	0.46	0.26	.58*	0.14	0.38	0.17	0.2	-0.22	0.02	-0.04	-0.08	
Mean	4.17	2.48	5.12	4.92	5.37	5.19	5.19	4.13	3.42	3.41	2.76	5.64	4.66	6.28	5.52	4.78
SD	0.54	1.43	0.95	0.98	0.89	0.86	0.96	0.78	1.11	0.85	0.81	1.12	1.56	1.06	1.04	0.17

Note. * $p < .05$. ** $p < .01$.

Table 2. Mediation Results for Career Decision-Making Self-Efficacy's Influence on the Relationship between the Career Development Intervention and the Psychosocial/Behavioral Outcomes.

Mediation Model	Path (a)(b) Effect Size	Sobel z	Path (c) R2	Path (c') R2 change after controlling for Self- Efficacy relationship with outcome variables
Intrinsic Motivation	-0.44	-2.12 (p<.05)	0.22	0.03
Integrated Regulation	-0.49	-2.47 (p<.01)	0.33	0.02
Identified Regulation	-0.65	-2.85 (p<.01)	0.62	0.11*
Introjected Regulation	-0.5	-2.28 (p<.05)	0.25	0.003
External Regulation	-0.46	-2.18 (p<.05)	0.24	0.02
Amotivation	0.6	1.97 (p<.05)	0.28	0.11*
Coping	-0.34	-2.2 (p<.05)	0.2	0.001
CBknowledge	-0.74	-2.82 (p<.01)	0.56	0.12*
CBplanning	-0.65	-2.71 (p<.01)	0.42	0.03
CBcompletion	-0.79	-2.42 (p<.05)	0.27	0.004
CBtotal	-0.64	-2.66 (p<.01)	0.52	0.02

Note. * $p < .05$; Table depicts (a) effect sizes of the intervention on outcome variables, (b) Sobel z test statistic, (c) unmediated effect sizes of the intervention on outcome variables, and (d) attenuated direct effect size of the intervention on career decision-making self-efficacy.

Table 3. Mediation Results for Integrated Regulation's Influence on the Relationship between the Career Development Intervention and the Psychosocial/Behavioral Outcomes.

Mediation Model	Path (a)(b) Effect Size	Sobel z	Path (c) R2	Path (c') R2 change after controlling for Integrated Regulation relationship with outcome variables
Career Decision- Making Self-Efficacy	-0.21	-1.96 (p<.05)	0.37	0.06
Intrinsic Motivation	-0.44	-2.03 (p<.05)	0.38	0.01
Identified Regulation	-0.46	-2.11 (p<.05)	0.62	0.15*
Introjected Regulation	-0.48	-2.07 (p<.05)	0.42	0.001
External Regulation	-0.46	-2.08 (p<.05)	0.42	0.01
CBknowledge	-0.42	-1.92 (p<.05)	0.46	0.18*
CBtotal	-0.42	-1.98 (p<.05)	0.37	0.04

Note. * $p < .05$; Table depicts (a) effect sizes of the intervention on outcome variables, (b) Sobel z test statistic, (c) unmediated effect sizes of the intervention on outcome variables, and (d) attenuated direct effect size of the intervention on integrated regulation.

Table 4. Mediation Results for Identified Regulation's Influence on the Relationship between the Career Development Intervention and the Psychosocial/Behavioral Outcomes.

Mediation Model	Path (a)(b) Effect Size	Sobel z	Path (c) R2	Path (c') R2 change after controlling for Identified Regulation relationship with outcome variables
Career Decision- Making Self-Efficacy	-0.47	-3.48 (p<.001)	0.51	0.001
Intrinsic Motivation	-0.72	3.11 (p<.01)	0.39	0.003
Introjected Regulation	-0.7	-2.96 (p<.01)	0.36	0.02
External Regulation	-0.8	-3.35 (p<.001)	0.48	0.009
CBknowledge	-0.71	-2.8 (p<.01)	0.41	0.11*
CBplanning	-0.76	-3.07 (p<.01)	0.4	0.007
CBtotal	-0.64	-2.71 (p<.01)	0.3	0.01

Note. * $p < .05$; Table depicts (a) effect sizes of the intervention on outcome variables, (b) Sobel z test statistic, (c) unmediated effect sizes of the intervention on outcome variables, and (d) attenuated direct effect size of the intervention on identified regulation.

Table 5. Low and High Engagement Group Means, Standard Deviations, and Repeated Measures Analysis of Variance Results for Pre- and Post-Intervention Assessments of Intrinsic Motivation and External Regulation

	Low Engagement (n = 6)				High Engagement (n = 11)				Group X Time		
	Pre-Intervention		Post-Intervention		Pre-Intervention		Post-Intervention		F	P	Partial Eta ²
	M	SD	M	SD	M	SD	M	SD			
External Regulation	4.58	0.96	4.79	0.93	4.52	1.11	5.86	0.66	8.22	.01	.35
Intrinsic Motivation	4.39	0.68	4.67	0.97	4.86	0.90	6.00	0.76	5.58	.05	.27

Table 6. Self-Determined Motivation Cluster Profiles Means, Standard Deviations, and Repeated Measures Analysis of Variance

Results for Pre- and Post-Intervention Assessments Career Decision-Making Self-Efficacy, Three Behavioral Variables, and Negative Emotions.

	Functional Motivation (n = 4)				Dysfunctional Motivation (n = 13)				Group X Time		
	Pre-Intervention		Post-Intervention		Pre-Intervention		Post Intervention		F	P	Partial Eta ²
	M	SD	M	SD	M	SD	M	SD			
Career Decision-Making Self-Efficacy	4.17	0.31	4.41	0.27	3.3	0.64	4.46	0.49	15.65	.001	.51
CBknowledge	4.85	0.25	6.25	0.38	3.52	0.6	6.38	0.68	10.55	.01	.41
CBcompletion	4.95	1.37	5.25	1.17	2.74	1.02	4.97	1.28	5.79	.05	.28
CBtotal	5.45	0.5	6.17	0.31	4.14	0.63	6.01	0.6	8.13	.01	.35
Negative Emotions	2.67	0.69	2.96	0.71	3.04	0.79	2.91	0.87	4.34	.05	.23

Appendix 1. IRB Protocol Approval

University of Idaho

Office of Research Assurances
Institutional Review Board

875 Perimeter Drive, MS 3010

Moscow ID 83844-3010

Phone: 208-885-6162

Fax: 208-885-5752

irb@uidaho.edu

To: Damon Burton
From: Jennifer Walker
Date: 2/26/2015 11:45:36 AM
Title: What's Next?: The Impact of a Life After Sport Intervention on Student-athletes'
Project: 15-631
Approved: February 26, 2015
Renewal: February 25, 2016

On behalf of the Institutional Review Board at the University of Idaho, I am pleased to inform you that the protocol for the above-named research project is approved as offering no significant risk to human subjects.

This study may be conducted according to the protocol described in the application without further review by the IRB. As specific instruments are developed, each should be forwarded to the ORA, in order to allow the IRB to maintain current records. Every effort should be made to ensure that the project is conducted in a manner consistent with the three fundamental principles identified in the Belmont Report: respect for persons; beneficence; and justice.

This IRB approval is not to be construed as authorization to recruit participants or conduct research in schools or other institutions, including on Native Reserved lands or within Native Institutions, which have their own policies that require approvals before Human Participants Research Projects can begin. This authorization must be obtained from the appropriate Tribal Government (or equivalent) and/or Institutional Administration. This may include independent review by a tribal or institutional IRB or equivalent. It is the investigator's responsibility to obtain all such necessary approvals and provide copies of these approvals to ORA, in order to allow the IRB to maintain current records.

As Principal Investigator, you are responsible for ensuring compliance with all applicable FERPA regulations, University of Idaho policies, state and federal regulations.

This approval is valid until February 25, 2016.

Should there be significant changes in the protocol for this project, it will be necessary for you to submit an amendment to this protocol for review by the Committee using the Portal. If you have any additional questions about this process, please contact me through the portal's messaging system by clicking the 'Reply' button at the top of this message.



Jennifer Walker

Appendix 2. Student-Athlete Informed Consent

INFORMED CONSENT FOR CAREER DEVELOPMENT TRAINING PROGRAM STUDY

This study is designed to examine the impact of a career development training program. The researcher, Matt Vaartstra of the University of Idaho, would appreciate your help by participating in a 3-week training program consisting of 6 group sessions and 1 individual session. You will also be asked to meet as a “community of learners” once a week for 6-weeks after the training program to discuss career plan progress, mental skills, ask questions, and receive additional support in your career development. Data will be collected through a survey instrument that you will complete before and after the training program.

This study will help researchers and practitioners to evaluate a career development training program for student-athletes and examine its effectiveness. This study has been approved by the University of Idaho Institutional Review Board which found no foreseeable risks associated with the study. The potential study benefits include creation of a career development training program that will help student-athletes learn and practice positive career development behaviors and prepare for life after graduation. The results of this study may be published, but your responses will be completely confidential, and access to all data will be restricted to the researchers unless you grant prior approval. Data will be stored securely. Any questions you have concerning this study may be referred to Matt Vaartstra (vaar5823@vandals.uidaho.edu) at any time. Damon Burton (dburton@uidaho.edu) may also be contacted regarding this study. Participation in this study is strictly on a volunteer basis.

I have read the above information, and the nature, demands, risks, and benefits of the project have been explained to me. I knowingly assume the minimal risks involved, and understand that I may withdraw my consent and discontinue participation at any time without penalty. In signing this consent form, I am not waiving any legal claims, rights or remedies and am certifying that I am at least 18 years of age.

Printed Name: _____

Signed: _____

Yes, I give my informed consent and would like to participate in the study.

Appendix 3. Career Development Behaviors Survey (CDBS)

Please rate the degree to which you agree or disagree with the following statements:

	Strongly Disagree				Strongly Agree		
1. I know how to explore different careers	1	2	3	4	5	6	7
2. I know how to create a strong resume	1	2	3	4	5	6	7
3. I know how to use my network for career development	1	2	3	4	5	6	7
4. I know how to effectively search for a job	1	2	3	4	5	6	7
5. I know how to properly interview for a job	1	2	3	4	5	6	7
6. I have successfully explored my career options	1	2	3	4	5	6	7
7. I have successfully created a strong resume	1	2	3	4	5	6	7
8. I have successfully used my network for career development	1	2	3	4	5	6	7
9. I have successfully completed a job search	1	2	3	4	5	6	7
10. I have successfully prepared for a job interview	1	2	3	4	5	6	7
11. I plan to explore my career options	1	2	3	4	5	6	7
12. I plan to create a strong resume	1	2	3	4	5	6	7
13. I plan to use my network for career development	1	2	3	4	5	6	7
14. I plan to complete an effective job search	1	2	3	4	5	6	7
15. I plan to properly prepare for a job interview	1	2	3	4	5	6	7

16. Please indicate your current level of commitment to career development activities by selecting the statement that best describes you: (select one)

- a. I am not thinking about career development activities right now.
- b. I am thinking about getting started with career development activities.
- c. I am preparing to get started with career development activities.
- d. I am currently active in career development activities.
- e. I have been engaged in career development activities for several months.

Appendix 4. Sport Motivation Scale-6-Career Development (SMS-6-CD)

Using the scale below, please indicate to what extent each of the following items corresponds to one of the reasons for which you are presently engaged in career development activities.

Why do you engage in career development

If you do not presently engage in any career development activities complete this section as if you would and check this box <input type="checkbox"/>	Does not			Corresponds			
	Correspond at all			Exactly			
	1	2	3	4	5	6	7
1. For the excitement I feel when I am really involved in my career field							
2. Because it's part of the way in which I've chosen to live my life	1	2	3	4	5	6	7
3. 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	6	7
4. Because it allows me to be well regarded by people that I know	1	2	3	4	5	6	7
5. I don't know; I have the impression of being incapable of succeeding in this career	1	2	3	4	5	6	7
6. Because I feel a lot of personal satisfaction while mastering certain difficult career development strategies such as creating a resume	1	2	3	4	5	6	7
7. Because it is absolutely necessary to engage in career development if one wants to find a career	1	2	3	4	5	6	7
8. Because it is one of the best ways I have chosen to develop other aspects of my life	1	2	3	4	5	6	7
9. Because my career is an extension of me	1	2	3	4	5	6	7
10. Because I must engage with my career to feel good about myself	1	2	3	4	5	6	7
11. For the prestige of being in my career	1	2	3	4	5	6	7
12. I don't know if I want to continue to invest my time and effort as much in my career	1	2	3	4	5	6	7
13. Because participation in career development is consistent with my deepest principles	1	2	3	4	5	6	7
14. For the satisfaction I experience while I am perfecting my career	1	2	3	4	5	6	7
15. Because it is one of the best ways to maintain good relationships with my colleagues	1	2	3	4	5	6	7
16. Because I would feel bad if I was not taking time to do it	1	2	3	4	5	6	7
17. I don't really think my place is in a career field	1	2	3	4	5	6	7
18. For the pleasure of discovering new career strategies and tools	1	2	3	4	5	6	7
19. For the material and/or social benefits of being in my career	1	2	3	4	5	6	7
20. Because career development will improve my career options	1	2	3	4	5	6	7
21. Because participation in my career is an integral part of my life	1	2	3	4	5	6	7
22. I don't seem to be enjoying my career as much as I previously did	1	2	3	4	5	6	7
23. Because I must engage in my career regularly	1	2	3	4	5	6	7
24. To show others how good I am in my career field	1	2	3	4	5	6	7

Appendix 5. Career Decision-Making Self-Efficacy – Short Form (CDMSE-SF)

Full copies of this instrument are copyrighted and cannot be reproduced. Permission has been given by the authors to include up to 5 sample items for dissertation use.

Sample items include:

Stem: How confident are you that you could...

determine what your ideal job would be?

change careers if you did not like your first choice?

identify employers, firms, institutions relevant to your career possibilities?

make a plan of your goals for the next 5 years?

Respondents rate their confidence on a 5-point Likert-type scale ranging from 1 (*no confidence at all*) to 5 (*complete confidence*).

Appendix 6. Athlete Identity Measurement Survey (AIMS)

Please indicate how much you agree with each of the following statements:

	Strongly Disagree				Strongly Agree		
1. I consider myself an athlete.	1	2	3	4	5	6	7
2. I have many goals related to sport.	1	2	3	4	5	6	7
3. Most of my friends are athletes.	1	2	3	4	5	6	7
4. Sport is the most important part of my life.	1	2	3	4	5	6	7
5. I spend more time thinking about sport than anything else.	1	2	3	4	5	6	7
6. I feel bad about myself when I do poorly in sport.	1	2	3	4	5	6	7
7. I would be very depressed if I were injured and could not compete in sport.	1	2	3	4	5	6	7

Appendix 7. Change Event Inventory (CEI)

1. When you first started thinking about life after sport, what was your initial reaction? (indicate one of the following)

- a. I have not started thinking about life after sport.
- b. I ignored the situation.
Why? _____
- c. I tried to cope with the situation by myself, without consulting anyone.
Why? _____
- d. I turned to receive emotional/professional support from others. From whom?
(indicate for each of the following)

Family	Friends	Teammates	Coach	Assistant Coach	Trainer	Doctor	Mentor	Counselor	Sport Psychologist	Other <input type="checkbox"/> which?
<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	_____
<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	_____

2. Was it your decision to consult with this person or were you instructed to do so by someone else?

- a. It was my decision
- b. I was instructed to do so by someone else. By whom? _____

3. Based on your answer from the previous page, please indicate for each of the following to what degree did you feel that consulting those persons was helpful in coping with life after sport?

	Very Unhelpful			Neutral			Very Helpful
Family	1	2	3	4	5	6	7
Friends	1	2	3	4	5	6	7
Teammates	1	2	3	4	5	6	7
Coach	1	2	3	4	5	6	7
Assistant Coach	1	2	3	4	5	6	7
Trainer	1	2	3	4	5	6	7
Doctor	1	2	3	4	5	6	7
Mentor	1	2	3	4	5	6	7
Counselor	1	2	3	4	5	6	7
Sport Psychologist	1	2	3	4	5	6	7
Other _____	1	2	3	4	5	6	7

4. To what degree do you have professional resources available in your environment (e.g., sport psychologist, counselor)? (circle the relevant number)

1 2 3 4 5 6 7
 Low Availability Moderate Availability High Availability

5. What would be the most accurate description of the way you are addressing life after sport? (circle one)

- a. I am ignoring life after sport and trying to avoid thinking about it.
- b. I am considering my options for life after sport, and then I will make the necessary adjustments in order to effectively cope with it.
- c. I considered my options for life after sport, and decided not to make the necessary adjustments in order to effectively cope with it.
- d. I am listening to the advice of others and acting according to their recommendations.
- e. I am not sure what I am doing to address life after sport.

6. To what degree have you considered consulting a sport psychologist to address life after sport?

1 2 3 4 5 6 7
 Not at All Moderate Very Much

7. To what degree do you consider consulting a sport psychologist as useful in similar situations?

1 2 3 4 5 6 7
 Not Useful at All Moderate Very Useful

8. Prior to thinking about life after sport, have you experienced similar events in the past?

YES NO

Appendix 8. Life After Sport Survey (LASS)

Please indicate how often you think about the following issues:

	Please choose the best answer				
	Never	Rarely	Sometimes	Often	Always
What am I going to do after college?	1	2	3	4	5
What career options do I have with my college major?	1	2	3	4	5
What am I going to do when my college sport career is over?	1	2	3	4	5
How am I going to stay connected to my sport after my playing career has come to an end?	1	2	3	4	5
How can I use my college degree to find a career I enjoy?	1	2	3	4	5
When my athletic eligibility runs out, what am I going to do with my life?	1	2	3	4	5
What types of jobs am I interested in applying for after college?	1	2	3	4	5
How can I use my experience as a student-athlete to enhance my career after sport?	1	2	3	4	5
How has my sport participation helped me develop marketable career skills?	1	2	3	4	5

Please rate how often you talk to others about life after sport. How often do you talk to...

	Please choose the best answer				
	Never	Rarely	Sometimes	Often	Always
your coach about your plans after college?	1	2	3	4	5
your parents/family about your plans after college?	1	2	3	4	5
your academic advisors about your plans after college?	1	2	3	4	5
your teammates about your plans after college?	1	2	3	4	5
your professors about your plans after college?	1	2	3	4	5
your friends outside of sport about your plans after college?	1	2	3	4	5
your university's career advisors about your plans after college?	1	2	3	4	5

Please rate how often you get the following feelings/emotions when thinking about life after sport.

	Please choose the best answer				
	Never	Rarely	Sometimes	Often	Always
Excitement	1	2	3	4	5
Upset	1	2	3	4	5
Distress	1	2	3	4	5
Happiness	1	2	3	4	5
Nervousness	1	2	3	4	5
Fear	1	2	3	4	5
Joy	1	2	3	4	5
Anxiety	1	2	3	4	5
Confidence	1	2	3	4	5
Doubt	1	2	3	4	5
Anticipation	1	2	3	4	5
Passion	1	2	3	4	5

Appendix 9. Collegiate Athlete Life after Sport Demographic Questionnaire (CALSDQ)

Please respond to the following demographic questions.

What is your gender? Male Female

What is your current academic standing? First Year Second Year Junior Senior
5th Year Senior

What is your currently declared college major?

What sport do you participate in? _____

What is your age in years? _____ years

How many years have you been playing your sport competitively? _____ years

What is your ethnic background?

American Indian

Black

Hispanic

Asian

White

Other _____

Please provide us with your permanent e-mail address for inclusion in short survey to be sent as a two-year follow-up to this study:

Appendix 10. Career Development Intervention Effectiveness Survey (CDIES)

Please answer the following questions regarding your thoughts about the training program:

- | | Not Effective | | Neutral | | Very Effective |
|--|---------------|---|---------|---|----------------|
| 1. How effective do you think the group sessions were in preparing you for life after sport? | 1 | 2 | 3 | 4 | 5 |
| 2. How effective do you think the individual session was in preparing you for life after sport? | 1 | 2 | 3 | 4 | 5 |
| 3. How strongly would you recommend you teammates to participate in a life after sport training program? | 1 | 2 | 3 | 4 | 5 |

Please rate the level to which you completed the following take-home challenges. (circle one for each)

Focus 2	Not at all	Partially	Half-complete	Mostly	Fully
Sokanu	Not at all	Partially	Half-complete	Mostly	Fully
What Can I Do With This Major	Not at all	Partially	Half-complete	Mostly	Fully
Goal Setting Sheet	Not at all	Partially	Half-complete	Mostly	Fully
Create/Update your Resume	Not at all	Partially	Half-complete	Mostly	Fully
Develop a Cover Letter	Not at all	Partially	Half-complete	Mostly	Fully
Networking Worksheet	Not at all	Partially	Half-complete	Mostly	Fully
Create/Update LinkedIn	Not at all	Partially	Half-complete	Mostly	Fully
Research Companies	Not at all	Partially	Half-complete	Mostly	Fully
Explore Job Boards	Not at all	Partially	Half-complete	Mostly	Fully
Practice Interview Questions	Not at all	Partially	Half-complete	Mostly	Fully

Appendix 11. Unabridged Literature Review

Introduction

Participation in National Collegiate Athletic Association (NCAA) sports has grown to over 460,000 student-athletes each year in the United States (Irick, 2013). Additionally, the National Association of Intercollegiate Athletics (NAIA) has over 60,000 additional student-athletes (About the NAIA, n.d.), and these numbers do not include student-athletes participating at community and junior colleges. Each of these student-athletes will have a certain portion of their individual identity tied to the sport they play (Debois, Ledon, Argiolas, & Rosnet, 2012; Kadlcik & Flemr, 2008; Lally, 2007; Samuel & Tenenbaum, 2011a; Van Raalte & Andersen, 2007; Warriner & Lavalley, 2008; Wolff & Lester, 1989). All of these student-athletes will also face the end of their sport careers at some point in their competitive experience, and most of them will be dealing with the transition from sport to life by the end of their college career. According to a report by the NCAA (2013) about the probability of competing in athletics beyond high school, it was estimated that less than three percent of college athletes continue on to professional sport.

Many studies have shown that athletes experience negative feelings (e.g., stress, grief, loss) and struggle with decision-making when ending their sport careers (Alfermann, Stambulova, & Zemaityte, 2004; Cecic Erpic, Wylleman, & Zupancic, 2004; Debois et al., 2012; Kadlcik & Flemr, 2008; Lally, 2007; Lotysz & Short, 2004; Navarro, 2013; Park, Tod, & Lavalley, 2012; Samuel & Tenenbaum, 2011a, 2011b, 2013; Shahnasarian, 1992; Stambulova, 2000, 2011; Stambulova, Alfermann, Statler, & Cote, 2009; Stambulova, Stephan, & Japhag, 2007; Stoltenburg, Kamphoff, & Lindstrom Bremer, 2011; Tremaine Drahota & Eitzen, 1998; Van Raalte & Andersen, 2007; Warriner & Lavalley, 2008; Wittmer, Bostic, Phillips, & Waters, 1981; Wolff & Lester, 1989; Wooten, 2005; Young, Pearce, Kane,

& Pain, 2006). Stated differently, each year in the United States over a half-million student-athletes begin to think about or are currently dealing with transitioning to life after sport, and their experiences dealing with the life after sport transition may result in negative emotions, indecision, and a lack of focus and goals.

Research indicates that increased confidence in career planning skills has been found to improve athletes' cognitions, emotions, and ability to transition out of sport (Burns, Jasinski, Dunn, & Fletcher, 2013; Demulier & Le Scanff, 2013; Kadlcik & Flemr, 2008; Navarro, 2013; Shahnasarian, 1992; Stambulova et al., 2009; Stark, 1985; Wylleman, Alfermann, & Lavallee, 2004). Furthermore, Samuel and Tenenbaum (2013) found that athletes experiencing career change-events consulted with others and relied on the availability of professional support. However, student-athletes may not think about or find support for dealing with life after sport because their identity is so tied up in being an athlete that they do not recognize the need to plan for life beyond sport (Navarro, 2013; Stoltenburg et al., 2011; Van Raalte & Andersen, 2007).

Recently, intervention strategies for assisting athletes transitioning out of sport have been suggested for both sport psychology consultants (Samuel & Tenenbaum, 2011b) and academic support services professionals (Burns et al., 2013). Furthermore, Wylleman and colleagues (2004) suggest that intervention strategies are shifting from therapeutic approaches to athlete life-skills programs that provide athletes with support and education to enhance their ability to plan for and then deal with post-sport career decisions. Although intervention strategies are being suggested for both sport psychology consultants (see Samuel & Tenenbaum, 2011b) and academic support services professionals (see Burns et al., 2013), few studies have examined the effects of an intervention program that combines both sport

psychology and career development approaches. Additionally, more research is needed to optimize the effectiveness of life after sport programs for student-athletes, particularly ones examining what the actual behavioral effects of interventions are when used with student-athletes.

Working Model of Athlete Career Development

This intervention study will be guided by a Working Model of Athlete Career Development (WMA CD; see Figure 1). This WMA CD conceptualizes that a career development intervention (i.e., education and training in career exploration, resume and cover letter building, self-marketing, networking, job searching, interview skills) will result in improvements to several different psychosocial (i.e., self-efficacy, intrinsic motivation, change-event coping, athlete identity, and increased positive and decreased negative emotions about life after sport) and behavioral (i.e., engagement in career development behaviors, career center visits, and completion of take-home career development tasks) career development outcomes. The working model predicts that several of the psychosocial variables (i.e., self-efficacy, intrinsic motivation, change-event coping, athlete identity) will function as mediators of the relationship between the intervention and the behavioral outcomes. The career development intervention in this study focuses on enhancing career development skills by pairing the sources of self-efficacy (i.e., performance accomplishments, vicarious experiences, verbal persuasion, arousal control) with each career development skill covered in the intervention and allowing participants to explore, learn, and practice career development skills.

The primary overall hypothesis of the WMA CD is that the intervention group will experience significantly better psychosocial and behavioral outcomes compared to the control

group. Participation in the career development intervention should enhance key career development skills reinforced by the sources of self-efficacy leading to enhanced career decision-making self-efficacy, increased intrinsic motivation for career development, improved change-event coping skills, adjusted athlete identity, increased positive and decreased negative emotions, greater engagement in career development behaviors, increased career center visits for support, and greater completion of take-home career development tasks.

Intervention Outcomes

According to the WMACD, intervention outcomes are separated into psychosocial and behavioral categories. While behavioral outcomes are expected to be purely outcome variables, the psychosocial variables will act as mediators of the relationship between the intervention and the behavioral outcomes.

Behavioral outcomes. The behavioral outcomes examined by the WMACD are intended to measure behavior change as a result of the intervention. Self-reported engagement in common career development behaviors, number of career center visits, and self-reported completion of several take-home tasks related to the intervention material will provide an indication of behavior change progress among participants. Currently minimal research has actually examined behavior change as an outcome of career development interventions for student-athletes, so this study will be among the first to go beyond psychosocial outcomes and assess changes in key career development behaviors. According to the WMACD, the career development intervention should increase career development behaviors.

Positive and negative emotions regarding life after sport. In a qualitative study examining career-ending injuries, Stoltenburg and colleagues (2011) found that there was a

wide variety of both positive and negative emotions that athletes experienced at the end of their sport career. Emotional reactions to life after sport, whether retirement is planned or unplanned, are common throughout the literature on athlete retirement (e.g., Alfermann et al., 2004; Cecic Erpic et al., 2004; Stambulova et al., 2007; Warriner & Lavallee, 2008). Alfermann and colleagues (2004) found that while high athletic identity correlated with decreased positive reactions to retirement in athletes, planning for retirement led to a significant increase in adaptive emotional and behavioral outcomes. Similarly, Stambulova and colleagues (2007) also found that athletes who engaged in retirement planning had more positive emotions and coping strategies for dealing with life after sport compared to athletes who planned minimally. Although emotions about life after sport have not been examined as a career development intervention outcome in the literature, it seems likely that athletes who have completed an intervention based on the WMACD should have more positive emotional responses to thinking about life after sport.

Intervention Mediator Variables

Several of the psychosocial outcomes identified in the WMACD are predicated to act as mediators of the behavioral outcomes. Specifically, self-efficacy, intrinsic motivation, change-event coping, and athlete identity will mediate the relationship between the intervention and the behavioral career development outcomes. Stated differently, the psychosocial variables (i.e., self-efficacy, intrinsic motivation, change-event coping, and athlete identity) will help to better explain the existing relationship between the intervention and the outcome variables (i.e., mediation).

Career decision-making and self-efficacy. A majority of research on career decision-making has focused on self-efficacy (see Gaudron, 2011). Bandura (1977, 1986) described

self-efficacy as a person's beliefs concerning his or her ability to successfully perform a given task or behavior, and he considered self-efficacy to be a major antecedent of behavior and behavior change, particularly from a clinical perspective. Based on self-efficacy theory, an individual with low self-efficacy in a task should avoid that task, whereas someone with high task self-efficacy should be motivated to engage in that task. Hence, if the goal is to get someone to complete a task, increasing their task-specific self-efficacy expectations should make task completion more likely. Moreover, Bandura (1977) proposed four sources of information that influence self-efficacy expectations and can be used to modify self-efficacy beliefs, including: performance accomplishments, vicarious learning experiences, verbal persuasion, and arousal control. Performance accomplishments refer to past experiences in which individuals have been successful performing a task. Vicarious learning is also sometimes referred to as modeling and focuses on indirect learning such as an individual observing and learning from others success performing a task or imagining personal success. Verbal persuasion includes encouragement, support, positive self-talk, and reinforcement. Finally, arousal control refers to enhancing personal efficacy by lowering stress and anxiety by controlling arousal and emotions. Bandura (1977) proposed that by improving these four sources of information, self-efficacy about performing a task or behavior could be increased. It is also important to note that self-efficacy is a domain-specific construct. In other words, an individual may have high self-efficacy for one task, but then low self-efficacy for a different task. Betz and Hackett (1981) were the first researchers to bring Bandura's concept of self-efficacy into the domain of career development, and their research has resulted in many career self-efficacy studies in the last three decades.

Another theory that has also shaped the research in career development is Crites's (1978) model of career maturity. Crites's (1978) career maturity model postulates that "good" career decisions are shaped by accurate self-appraisal, gathering relevant occupational information, goal selection, future planning, and problem solving. When Taylor and Betz (1983) sought to create a measure for career decision-making self-efficacy, they combined Bandura's (1977) and Crites's (1978) theories to provide a structure that defined competence in career decision-making (i.e., Crites's model of career maturity) in order to better measure self-efficacy in the domain of career development.

Taylor and Betz (1983) developed the first inventory (i.e., Career Decision-Making Self-Efficacy Scale; CDMSES) used to measure career decision-making self-efficacy, and the CDMSES has become the most widely used measure of career decision-making self-efficacy in the research literature (see Gaudron, 2011). High levels of career decision-making self-efficacy have since been linked to lower career indecision (Betz, Klein, & Taylor, 1996; Betz & Serling, 1995; Taylor & Betz, 1983; Taylor & Popma, 1990), improved career certainty (Betz et al., 1996; Betz & Serling, 1995), increased vocational identity (Betz et al., 1996), lower fear of commitment (Betz & Serling, 1995), increased career motivation (Komarraju, Swanson, & Nadler, 2014; Niles & Sowa, 1992), greater career maturity (Luzzo, 1995), enhanced satisfaction with academic major selection (Komarraju et al., 2014) and increased career exploration (Betz & Serling, 1995).

It is important to note that both personal and social factors have been found to impact career decision-making self-efficacy (Blustein, 1999). More specifically, the Big Five personality traits of conscientiousness and extraversion have been found to predict increased career self-efficacy, while neuroticism predicts decreased career self-efficacy (Hartman &

Betz, 2007). Additionally, Ganske and Ashby (2007) found that the personality trait of perfectionism was linked to career decision-making self-efficacy. They reported that adaptive perfectionists had higher levels of career decision-making self-efficacy than maladaptive perfectionists and non-perfectionists. Social and situational factors such as timing of retirement (Stoltenburg et al., 2011), career planning (Young et al., 2006), and nationality/culture (Stambulova et al., 2007) have also been found to impact the career development process and career self-efficacy of athletes. Furthermore, career interventions have been shown to increase career decision-making self-efficacy (see Betz & Luzzo, 1996 for a brief review).

Foss and Slaney (1986) reported increased career decision-making self-efficacy after a career intervention. A videotaped intervention was developed to broaden the range of career options for both men and women, specifically by reducing sex-role stereotyping in career planning. The video was approximately thirty minutes long and covered five primary topics including: (a) female socialization and expectations, (b) occupational dreams and realities, (c) male/female relationships, (d) women's view of self and other women, and (e) the reality and effects of change. The CDMSES was given to a sample of 80 female undergraduate students before and after they completed the video intervention. Foss and Slaney (1986) found that CDMSES scores were significantly higher at post-test compared to pre-test, indicating that the intervention improved the career decision-making self-efficacy of the women in the study. Additionally, they suggested that use of control groups in future longitudinal intervention be used for comparison purposes (Foss & Slaney, 1986). To that end, Sullivan and Mahalik (2000) implemented a 6-week intervention program focusing on vocational exploration and commitment with a group of 61 female graduate and undergraduate students split into

treatment and control groups. The treatment group (n = 31) completed the 6-week intervention taking measures of career decision-making self-efficacy before and after the intervention. The control group (n = 30) also completed the same measure of career decision-making self-efficacy but did not experience the intervention. Sullivan and Mahalik (2000) found that participants in the treatment group had significantly higher scores post-test than did the control group. Additionally, the treatment group had significantly higher scores post-test compared to pre-test, whereas the control group did not have significant differences between pre- and post-test. In other words, a 6-week career development intervention increased career decision-making self-efficacy.

Recently, universities have become interested in career development interventions for their undergraduate students in an effort to help undecided students select a major (Reese & Miller, 2006) or to enhance the career development of students in a selected major (Landrum & Mulcock, 2007; Prehar & Ignelzi, 2012). Reese and Miller (2006) implemented a 15-week career development course for students who were undecided in their major. The course met in one-hour sessions once a week for fifteen weeks. The intervention was based in Crites's (1978) career maturity model and focused on accurate self-appraisal, gathering occupational information, goal selection, making future plans, and problem solving. The course used supplemental readings, lectures, a weekly journal, group activities, and discussion related to goal selection, planning for the future, and anticipating how to handle obstacles in the future. Furthermore, students were required to meet individually with the instructor in the middle of the semester to check on the students' individual progress and clarify their goals. Reese and Miller (2006) found that the intervention increased career decision-making self-efficacy and decreased perceived career difficulties for participants.

Landrum and Mulcock (2007) reported increased academic commitment and higher graduation rates from 629 students who completed an introductory course in psychology that focused on career information and planning for those seeking an undergraduate psychology degree. Similarly, Prehar and Ignelzi (2012) created a short career planning intervention for undergraduate psychology majors that consisted of a one-time presentation to raise awareness of career planning issues. They found that the presentation generated interest in career planning and positive student feedback indicated that the presentation was helpful. Gati, Ryzhik, and Vertsberger (2013) implemented a 5-day workshop on career development with 1,315 young veterans designed to assist with their transition to civilian life. A comparison of pre-test to post-test scores showed a decrease in participant's career decision-making difficulties and an increase in their career decision-making self-efficacy. Other examples of the success of career development interventions can be found throughout the literature (see Dillinger & Landrum, 2002; Fouad, Cotter, & Kantamneni, 2006 for further examples).

The WMACD hypothesizes that the career development intervention used in this study will enhance career decision-making self-efficacy. Furthermore, career decision-making self-efficacy will act as a mediator of the relationship between the intervention and the outcome variables.

Intrinsic motivation. Self-Determination Theory (SDT) was first proposed by Deci and Ryan (1985) as a way to understand the process of intrinsic versus extrinsic motivation. SDT posits that people are innately and proactively motivated to master their social environment. The focus of SDT is on creating conditions that enhance an individual's innate need to successfully engage in their environment (Ryan & Deci, 2000). Deci and Ryan (1985) suggested that satisfaction of three psychological needs (i.e., competence, autonomy, and

relatedness) increases intrinsic motivation for a task. Furthermore, they proposed that self-determination occurred on a continuum from amotivation (i.e., no motivation at all) to intrinsic motivation (i.e., motivated by purely internal reasons without external influence). The greater the satisfaction of the needs, the more self-determined motivation would become, moving from amotivation thru extrinsic motivation to intrinsic motivation (Deci & Ryan, 1985). Extensive support for self-determination theory can be found throughout the motivation literature in numerous domains (see Deci & Ryan, 2002 for a review).

Research has shown that individuals with high levels of self-determined motivation perform better (Amiot, Gaudreau, & Blanchard, 2004), engage in more positive coping strategies in stressful situations (Amiot et al., 2004), and invest more effort in activities (Pelletier, Fortier, Vallerand, Tuson, Brière, & Blais, 1995) than do their more extrinsically or amotivated counterparts. Additionally, in a pre-post-test study utilizing 226 undergraduate student participants, Komarraju and colleagues (2014) found that students who were more confident about obtaining career-relevant information and solving career-related problems were more intrinsically motivated. They also identified career decision-making self-efficacy as a predictor of self-determined motivation ($\beta = .171$, $t(223) = 2.54$, $p = .012$), although that relationship was mediated by perceived gain in knowledge about career information. Furthermore, Betz and Klein (1996) suggested that interventions that targeted improving both career decision-making self-efficacy and competence would result in greater improvements to career outcomes.

Although intrinsic motivation has not been examined as an intervention outcome specifically with student-athlete populations, it seems logical to assume a career development intervention will improve levels of self-determined motivation by increasing perceived

competence and autonomy, and thus lead to positive psychosocial and behavioral outcomes in student-athletes. Furthermore, increased intrinsic motivation for career development may mediate the relationship between the intervention and the behavioral outcomes. Hence, intrinsic motivation will be examined as a mediator of the behavioral outcomes.

Change-event coping. Alfermann and colleagues (2004) found that athletes who engage in adaptive career planning had better and more positive transitions to life after sport. The transition to life after sport is a complex process for most athletes (see Stambulova et al., 2009). However, it was not until recently that athletic retirement was considered a process. Early research on athletic retirement centered on the end of an athletic career being similar to a dying experience (Wylleman, Lavallee, & Alfermann, 1999), and retirement was viewed as a negative event in athletes' lives. Building on career theorist Schlossberg's (1981) work, researchers began to define athletic retirement as a neutral (i.e., neither inherently positive nor negative) transition that each athlete went through over a period of time (Sinclair & Orlick, 1993; Taylor & Ogilvie, 1994). Schlossberg (1981) also suggested that transitions required a complex coping process in which the positive or negative outcomes were determined by the coping resources of the individual during the transition. In Schlossberg's model (1981) coping strategies are the primary tool to deal with transitions, with the influence of the perceived situation, sense-of-self variables, and social support all being critical factors (Schlossberg, Waters, & Goodman, 1995). Although Taylor and Ogilvie's (1994, 2001) career termination model includes coping resources, they also discuss causes of retirement and factors that relate to career transition such as self-identity and perceptions of control. However, the most widely used model applied to athletes going through career transition is Stambulova's (1994, 2003) athletic career transition model. Stambulova's model (1994, 2003) considers a career

transition as a process of coping with a set of specific demands/challenges that is necessary for continuing athletic careers successfully or adjusting to post-career life. In this regard, Stambulova (1994, 2003) views career transitions in sport as a lifespan process. Transitions happen throughout the athletic career, and in order to continue in sport, the athlete must cope with the challenges of each transition or leave the sport. Moreover, the final transition in an athletic career is retirement or discontinuation of sport participation. Stambulova and colleagues (2007) summarize current career transition theory by stating:

To summarize, the career transition models allow viewing athletic retirement as a process involving pre-conditions related to the athletic career termination, perceived transition demands, coping strategies associated with external/internal factors that facilitate and/or interfere (with) adaptation to the post-career, and also outcomes/consequences of the transition. (p. 103)

Furthermore, athletic career termination is viewed as a holistic process in which the development of coping strategies and resources throughout an athletic career are critical to a successful transition to life after sport (Stambulova et al., 2009).

Career development resources. Alfermann and colleagues (2004) emphasize that life after sport interventions need to help athletes understand the resources available to them and enhance readiness for the transition to life after sport. Furthermore, they suggest supplementing group interventions with individual sessions in order to better assist each athlete. One potentially underutilized resource for student-athletes are university support services such as career services. Burns and colleagues (2013) found that student-athletes who were more satisfied with their school's academic support services had higher career decision-making self-efficacy. This finding suggests that even if a student-athlete uses the support

services available to them, it is important for the services to be perceived as effective. Burns and colleagues (2013) encouraged additional research to examine student-athlete satisfaction with career development programs. In a study examining the perceptions of professional soccer players on retirement, Drawer and Fuller (2002) found that support services for athletes were lacking, particularly in the area of career development. Similarly, Shahnasarian (1992) suggested that early career development intervention would help professional football player's transition to life after sport.

Samuel and Tenenbaum (2011a, 2011b, 2013) describe retirement from sport as just one of many change-events in an athlete's career. Change-events are characterized by distinct profiles of perception, reaction, and coping. Samuel and Tenenbaum (2011a) found that increased athletic identity was associated with increased perceived significance of change-events. Applied to the life after sport transition, this supports the suggestion that athletes should begin decreasing athletic identity as they approach retirement in order to decrease the perceived significance of the change-event (Lally, 2007) in order to reduce the severity of the transition to life after sport. Samuel and Tenenbaum (2011b) go on to describe that the most positive response to a change-event is mobilization. Mobilization includes personal development (e.g., developing new coping skills), self-improvement (e.g., improving existing coping skills), and an active search for an athlete's strengths to help them cope with the change-event (Samuel & Tenenbaum, 2011b). Self-exploration, decision-making, and self-growth are critical components to a mobilization response from athletes in a change-event (Samuel & Tenenbaum, 2011b), and an athlete's decision-making ability is key in making the response positive and allowing for mobilization to occur (Samuel & Tenenbaum, 2013). Athletes' decisions to make behavior changes during a change-events can be predicted by the

helpfulness of the support they received, their motivation to change, and their coping resources. Samuel and Tenenbaum (2013) also indicated that athletes' decision-making abilities are affected by availability of support and their perceived control over the change-event. Stated differently, educating athletes on change-events (e.g., retirement), teaching athletes coping strategies, and providing athletes with knowledge of resources available to them can help enhance their ability to deal with change and make good decisions (Samuel & Tenenbaum, 2013). To that end, Demulier and Le Scanff (2013) suggest that career development interventions focus on increasing career self-efficacy, and that career goals should be emphasized in order to increase career planning among athletes.

According to the WMACD, the career development intervention should enhance student-athlete coping skills. Specifically, they should have greater coping resources available to them and feel more prepared to cope with life after sport. The WMACD predicts that change-event coping will act as a mediator of the relationship between the intervention and the outcome variables.

Athlete identity. Lally (2007) stated that athletes going through the process of retirement and transitioning to life after sport often deal with unique experiences because their identity is so strongly tied to being athletes. Although athletes may experience many different psychological difficulties when retiring (see Cecic Erpic et al., 2004 for a review), athletic identity can be directly addressed in career development interventions (Lally, 2007). Lally (2007) examined the experiences of student-athletes retiring from their respective sports in a longitudinal, qualitative study consisting of three interviews given at the beginning of the athletes' last season, one month post retirement, and one year post retirement. Lally (2007) found that athletes who actively decreased their athletic identity throughout their last year of

competition were less likely to have an identity crisis or confusion during the transition to life after sport and concluded that helping athletes examine and explore their identity well before the end of their career would help athletes in their transition. Similarly, Debois and colleagues (2012) suggested that allowing athletes to discuss their life and share their experiences helped them to maintain a coherent identity throughout their athletic career. Kadlcik and Flemr (2008) also found that athletes tend to shift their identity away from sport towards the end of their careers. In a study on the retirement experiences of young female gymnasts, Warriner and Lavallee (2008) found that the interaction between elite sport involvement and the process of identity formation may have negative implications for athletes' experiences of retirement. However, they suggest that if parents and coaches are aware and actively assist in the adaptive formation of identity in young athletes, the transition to life after sport can be smoother and create less distress.

Although most research suggests that lowering athlete identity towards the end of a sport career (see Kadlcik & Flemr, 2008; Lally 2007) has a positive effect on the life after sport transition, researchers are still debating the effect of lowering athlete identity on the retirement process. In the present study, it is unknown what effect (if any) the intervention will have on athlete identity or if athlete identity will be a mediator or moderator of the other outcome variables.

Moderator Variables

According to the WMACD, in addition to the psychosocial variables that will act as mediators, there may also be variables that serve as moderators of the outcomes. Both behavioral and psychosocial outcomes could experience moderation based on where student-athletes are in the behavior change process.

Stages of change. The Stages of Change Model is a transtheoretical model that has been considered in the life after sport literature (Prochaska, DiClemente, & Norcross, 1992; Park et al., 2012). The Stages of Change Model suggests five major stages of change that individuals go through when experiencing behavior/life change. The five stages are (a) pre-contemplation (i.e., individuals do not consider any change in behavior), (b) contemplation (i.e., individuals are aware of a need to change their behavior), (c) preparation (i.e., individuals get ready to take action), (d) action (i.e., individuals engage in behavior change), and (e) maintenance (i.e., individual behavior change lasts for longer than 6 months and becomes a habit). The stages of change are not necessarily linear and relapse to a previous stage is common. In a qualitative study using focus groups, Park and colleagues (2012) found that athletes discussed their retirement from sport in the context of the first four stages (i.e., pre-contemplation, contemplation, preparation, action). In congruence with Stambulova and colleagues (2009), Park et al. (2012) concluded that proactive interventions early in an athlete's career would be an effective strategy to assist them with the transition to life after sport. Furthermore, career development practitioners can better assist individual athletes if they identify the athlete's current stage of change. Specifically, for athletes in the pre-contemplation stage, they should focus on encouraging the athlete to engage in life after sport planning. For athletes in the contemplation stage, they should focus on the details of a life after sport plan and self-exploration. Athletes in the preparation stage should identify coping strategies and resources. Finally, athletes in the action stage should focus on emotion-focused coping and social support (Park et al., 2012). These findings indicate that life after sport interventions for athletes need to consider an individual component to assist athletes with their specific situation and consider the athletes current stage of change. The WMACD proposes

that a student-athlete's current stage of change will be a moderator of the intervention outcomes.

Career Development Intervention Strategies

Career interventions for undergraduate student populations typically range from a full semester (approximately 15 weeks: Reese & Miller, 2006) to one-time interventions completed in one short session (Foss & Slaney, 1986). Many of these studies, in addition to examining the effects of the intervention, were also investigating what types of interventions are most effective, and which intervention strategies improved career development outcomes the most. Komarraju and colleagues (2014) found that an intervention that focused on strengths, self-reflection, and problem solving skills was effective in increasing career self-efficacy in a sample of undergraduate psychology students. Specifically, their intervention promoted self-confidence in career decision-making skills by having students (a) assess their own interests and abilities, (b) gain knowledge about careers in their field, (c) effectively plan their career path, (d) select options that were relevant to their goals, and (e) understand how to overcome frustrations and barriers they may encounter in pursuing their careers. Furthermore, students who felt more confident in career decision-making skills demonstrated increased intrinsic motivation toward their own career development and academic plans.

Goal setting. Goal setting is a common topic for many career development interventions (Fouad et al., 2006). Fouad and colleagues (2006) applied the concept of self-efficacy to create an intervention that used Bandura's (1977) four sources of self-efficacy information (i.e., performance accomplishments, vicarious learning, verbal persuasion, arousal control) to improve career decision-making self-efficacy in 73 undergraduate students enrolled in a career exploration course. Course objectives included the following: (a) Develop

an understanding of the career planning process and how to apply it to career exploration and decision-making; (b) Identify interests, values, and skills, and utilize them to identify and make career choices; (c) Enhance knowledge about how to effectively use a variety of resources to research occupations; (d) Learn the initial steps of marketing oneself to employers by identifying strengths, verbalizing skills, and writing a resume; and (e) Determine a tentative major/career choice and develop ongoing career planning goals.

Students who completed the course perceived decreased career decision-making difficulties and increase career decision-making self-efficacy (Fouad et al., 2006). Similarly, Betz and Klein Voyten (1997) suggested goal setting as primary way to increase career decision-making self-efficacy through enhancing Bandura's (1977) performance accomplishments source of information. Prehar and Ignelzi (2012) identified (a) self-assessment, (b) career exploration, (c) experience, and (d) plan implementation as the steps to successful career development which also centers on setting career goals through implementing a career plan. Reese and Miller (2006; 2010) found that gathering information, setting goals, and making future plans had significant impact on individual career decision-making self-efficacy after a course-based intervention.

Career development specific strategies. In a meta-analysis of career intervention literature, Brown and colleagues (2003) examined the effectiveness of different career intervention strategies. The strategies they evaluated were based on the work of Brown and Ryan Krane (2000) and Ryan (1999) which identified the following five critical components to an effective career intervention: (a) workbooks and written exercises, (b) individualized interpretations and feedback, (c) in-session occupational information exploration, (d) modeling, and (e) attention to building support. Brown and colleagues (2003) specified that

effective career interventions focus on the following intervention strategies: (a) helping clients develop written goals for their future, post-intervention career work that are accompanied by reasonable implementation intentions and individualized counselor input; (b) providing clients with opportunities, in-session, to gather and process occupational information; (c) promoting the search for, and use of, occupational information outside of sessions; (d) providing opportunities to compare, in writing, occupations or fields of interest and to consider the support that is available for different options; (e) offering individual consultations for problematic assessment results; and (f) showing models who have successfully coped with career exploration and decision-making difficulties.

Wylleman and colleagues (2004) emphasized that interventions for athletes dealing with retirement from sport have shifted from therapeutic interventions to career development and life skills interventions. They identified the current strategies being used in athlete career interventions as the following: (a) values and interest exploration, (b) career awareness and decision-making, (c) CV/resume preparation, (d) interview techniques, (e) job search strategies, (f) career counseling, and (g) the development of generic social and interpersonal skills. Furthermore, Wylleman and colleagues (2004) suggested the need to examine the effectiveness of career interventions for athletes and assess the user-friendliness of these interventions with athletes.

Purpose, Research Questions, and Hypotheses

The primary purpose of this study will be to examine the effects of a multidisciplinary life after sport intervention program on student-athlete psychosocial and behavioral outcomes. Specifically, this study will address the following research questions. Will a life after sport training program help student-athletes to: (a) be more confident in their life after sport decisions, (b) feel more positive emotions regarding life after sport, (c) be more comfortable

seeking out support resources, (d) feel prepared to cope with life after sport, and (e) engage in positive behavior change toward career development.

It is hypothesized that intervention student-athletes will have increased self-efficacy for making life after sport decisions after the intervention compared to the control group. Intrinsic motivation for career development will be enhanced for intervention compared to the control participants. Additionally, student-athletes who participate in the intervention will have an enhanced ability to cope with life after sport decisions compared to control student-athletes, including feeling more confident seeking out support resources. Moreover, student-athletes who participate in the intervention will have more positive feelings towards planning for life after sport post-intervention and an increased tendency to engage in career development behaviors.

A second purpose of this study will be to examine the student-athletes perceptions on the effectiveness and user-friendliness of the life after sport intervention as measured by reflective self-assessments after the intervention is completed.

Recent research on career development interventions for student-athletes is currently limited as indicated by the prevalence of older studies in the literature compared to few recent studies. Continued research in this area is critical to improving support for student-athletes as they approach life after sport. This study will address a much needed area of research and seek to provide more current information on career development interventions for student-athletes.

Method

Design

The design of this study will be quasi-experimental pretest-posttest design. Participants will be accepted on a volunteer basis, and groups will be assigned through a

matching process to ensure equality across the groups. Furthermore, research questions will be examined through a survey taken pre-intervention and then again post- intervention. Additionally, this study will use an intervention and a control group to investigate differences between participating in the intervention (i.e., intervention group) and a control group receiving no intervention exposure. Participants in the control group will then be offered the opportunity to participate in the intervention post-study in order to give all participants equal opportunity to receive benefit from the study intervention.

Participants

Participants for this study will be student-athletes from a university in the Northwestern United States competing in NCAA Division 1 sport who volunteer to participate. Approximately 20 to 30 student-athletes will be recruited for each group (i.e., 20-30 intervention group, 20-30 control group, with 40-60 total participants). Estimated power calculations based on mean differences from recent literature indicated that a sample size of 16 was needed to attain an alpha level of .05 and a power of .80. All student-athletes who volunteer for the study will be required to be eighteen years of age or older, and all sport types will be welcome, with no restriction placed on age (except being 18 years or older). Preference will given to junior and seniors in school, but participation may be opened to all grade levels to ensure groups are filled.

Instruments

Participants will complete seven self-report inventories: (1) the Collegiate Athlete Life After Sport Demographic Questionnaire, (2) the Career Decision-Making Self-Efficacy Short Form (CDMSES-SF; Betz et al., 1996), (3) the Athletic Identity Measurement Scale (AIMS; Brewer & Cornelius, 2001), (4) the Change-Event Inventory (CEI; Samuel & Tenenbaum, 2011a), (5) the Life after Sport Survey (LASS; Vaartstra & Burton, 2014), (6) the Sport

Motivation Scale-6-Career Development (SMS-6-CD; Mallet, Kawabata, Newcombe, Otero-Forero, & Jackson, 2007), and (7) the Career Development Behaviors Survey (CDBS).

Participants in the intervention group will also complete the Intervention Effectiveness Survey (IES) to assess intervention effectiveness, user-friendliness, and take-home project completion. Additionally, intervention engagement will be assessed by the primary researcher using a composite of several subjective measures.

Collegiate Athlete Life after Sport Demographic Questionnaire (CALSDQ). The Collegiate Athlete Life after Sport Demographic Questionnaire (see Appendix A) will ask participants to provide basic demographic information (i.e., 7-items) about their age, gender, ethnic background, year in school, declared major, and sport experience (e.g., sport type and years of playing experience).

Career Decision-Making Self-Efficacy Scale Short Form (CDMSES-SF). The CDMSES-SF (see Appendix B) is a 25-item measure that assesses individuals' belief that they can successfully complete tasks necessary for making career decisions (Betz et al., 1996). The CDMSES-SF is based on the original CDMSES that was developed by Taylor and Betz (1983). The CDMSES-SF was intended to measure five factors based on Crites's (1978) model of career maturity: (a) accurate self-appraisal (i.e., 5 items), (b) gathering occupational information (i.e., 5 items), (c) goal selection (i.e., 5 items), (d) making future plans (i.e., 5 items), and (e) problem solving (i.e., 5 items). However, factor analyses in recent studies (Buyukgoze-Kavas, 2014; Gaudron, 2011) have indicated that an 18-item, four factor model of the CDMSES-SF has a better structure than the original 25-item, five factor instrument. The four factors are labeled: (a) goal selection (i.e., 5 items), (b) problem solving (i.e., 3 items), (c) information gathering (i.e., 5 items), and (d) goal pursuit management (i.e., 5

items). One example of an item from the CDMSES-SF is, “How confident are you that you could determine what your ideal job would be?” Respondents rate their confidence on a 5-point Likert-type scale ranging from 1 (*no confidence at all*) to 5 (*complete confidence*). Higher scores indicate greater levels of career decision self-efficacy (Betz, Hammond, & Multon, 2005).

Acceptable levels of internal consistency for the subscales comprising the CDMSES-SF have consistently been reported in the literature for both the five factor model (see Betz et al., 2005 and Betz et al., 1996) and the 4 factor model (Buyukgoze-Kavas, 2014 and Gaudron, 2011). Specifically, Buyukgoze-Kavas (2014) reported alpha levels of .88 for the total 18-item scale, .77 for the goal selection subscale, .64 for the problem solving subscale, .67 for the information gathering subscale, and .75 for the goal pursuit management subscale. Additionally, Buyukgoze-Kavas (2014) and Gaudron (2011) provided structural validity evidence for the four factor CDMSES-SF and convergent validity in the form of theoretically-interpretable correlations with a measure of generalized self-efficacy (Buyukgoze-Kavas, 2014). Furthermore, high test-retest reliability was reported by both Buyukgoze-Kavas (2014) and Gaudron (2011).

Athletic Identity Measurement Scale (AIMS). The AIMS (see Appendix C) is a 7-item measure of athletic identity that contains three lower order factors (i.e., 2 items for social identity, 3 items for exclusivity, and 2 items for negative affectivity), and one higher order factor labeled athletic identity (Brewer & Cornelius, 2001). The current AIMS is an updated version from the original instrument developed by Brewer, Van Raalte, and Linder (1993). A sample item from the AIMS is, “Sport is the most important part of my life.” Respondents

rate the extent to which they agree with each item on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Acceptable levels of internal consistency for each subscale of the AIMS has been shown in the literature (Brewer & Cornelius, 2001), although Brewer and colleagues (1993) concluded that due to factor structure the AIMS should be considered a unidimensional measure of athletic identity. Additionally, high test-retest reliability ($r = 0.89$) and construct validity has been established (see Brewer & Cornelius, 2001 for a full psychometric review of the AIMS).

Change-Event Inventory (CEI). The CEI (see Appendix D) is a four-section instrument designed to assess athletes (a) experience of change-events, (b) perception of and reaction to a single change-event, (c) decision-making, and (d) availability of help resources (Samuel & Tenenbaum, 2011a). The current study will only be examining one change-event (i.e., retirement from sport), and participants will be current student-athletes who have yet to experience this change-event. For this reason only the last section (i.e., 32 items) of the CEI will be used to assess how student-athletes plan to cope with life after sport and what resources they have used or plan on using.

The availability of help resources section of the CEI specifically asks respondents what resources they received support from in making their decision regarding the change event. Respondents are also asked to rate their perceived helpfulness and availability of the support resources. One sample item from the CEI is “Please indicate for each of the following to what degree did you feel that consulting the persons was helpful in coping with this event? Family” Respondents were asked to rate each coping resource on a 7-point Likert-type scale ranging from 1 (*very unhelpful*) to 7 (*very helpful*).

Acceptable levels of internal consistency have been found for the items of the CEI (Samuel & Tenenbaum, 2011a). Samuel and Tenenbaum (2011a) also demonstrated adequate fit for the internal structure of the CEI through structural equation modeling. Initial concurrent validity has been established through theoretically interpretable relationships with athlete identity (Samuel & Tenenbaum, 2011a). A detailed overview of the psychometric properties of the CEI can be found in Samuel and Tenenbaum (2011a).

Life after Sport Survey (LASS). The LASS (see Appendix E) is a newly developed survey designed to examine student-athlete perceptions about life after sport (Vaartstra & Burton, 2014). Specifically, it contains three sections that address three topics: current level of planning for life after sport, current resources being used to help plan and cope with life after sport, and current emotions/feelings towards life after sport. Additionally, the effectiveness of the resources being used is assessed. Full psychometric properties are not currently available for this instrument; however it has been used with over 200 student-athletes in an on-going study that just completed data collection. A maximum likelihood factor analysis with direct oblimin rotation indicated a two-factor solution (see Table 1) after the removal of two items (i.e., sadness and anger). By examining the items loaded onto each factor, factor 1 was labeled negative emotions, and factor 2 was labeled positive emotions. In response to the removal of two items (i.e., sadness and anger), two new items were written for inclusion in the LASS (i.e., upset and distressed). For the purpose of this study, a shortened version of the LASS (28 items) will be used removing items that are not relevant to the research questions in this study.

Sport Motivation Scale-6-Career Development (SMS-6-CD). The SMS-6-CD (see Appendix F) is a 24-item measure of motivation originally created to assess sport motivation (Mallett et al., 2007). For the purpose of this study, the items have been modified to measure

motivation to engage in career development behavior rather than sport motivation. The SMS-6-CD is conceptualized as a 6-factor instrument with the stem, "Why do you engage in career development activities" followed by 4 items per subscale relating to amotivation (e.g., I don't seem to be enjoying my career as much as I previously did), external regulation (e.g., To show others how good I am in my career field), introjected regulation (e.g., Because I must engage in my career regularly), identified regulation (e.g., Because career development will improve my career options), integrated regulation (e.g., Because participation in my career is an integral part of my life), and intrinsic motivation (e.g., For the pleasure of discovering new career strategies and tools). Respondents rate the extent to which each item corresponds to reasons why they engage in career development behaviors on a 7-point Likert-type scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*).

Acceptable levels of internal consistency for each subscale of the SMS-6 have been shown in the literature (Mallett et al., 2007). Mallett and colleagues (2007) also provided concurrent validity evidence in the form of theoretically interpretable correlations with measures of flow. Furthermore, confirmatory factor analysis supported the 6-factor structure of the instrument (Mallett et al., 2007). A full psychometric review of the SMS-6 can be found in Mallett and colleagues (2007).

Career Development Behaviors Survey (CDBS). The Career Development Behaviors Survey (see Appendix G) is a 16-item self-report inventory that asks participants to identify their current levels of engagement in career behaviors. The CDBS is separated into three categories (5-items each) in order to assess participants' knowledge of career behaviors (i.e., I know how to create a strong resume), use of career behaviors (i.e., I have successfully created a strong resume), and future plans for career behaviors (i.e., I am actively planning to

create a strong resume). Respondents rate the extent to which they agree with each item on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Participants will also identify their own current stage of change in regard to career development behavior. Additional career behavior outcomes will be measured by checking number of visits to the university career center and participation in any career center sponsored workshops.

Career Development Intervention Effectiveness Survey (IES). The Intervention Effectiveness Survey (see Appendix H) is a 14-item self-report inventory developed to assess respondents' perceptions about the effectiveness of the intervention and the level to which they completed the take-home challenges during the intervention. A sample item from the IES is, "How effective do you think the groups sessions were in preparing you for life after sport?" Respondents rate their perceived level of effectiveness on a 5-point Likert-type scale ranging from 1 (*not effective*) to 5 (*very effective*).

Intervention engagement score. In order to assess each participant's level of engagement during the intervention, the primary researcher will take field notes related to engagement during group sessions and the individual session. Upon completion of the group sessions each participant will be given a subjective score on a 5-point Likert-type scale ranging from 1 (*not engaged*) to 5 (*very engaged*). Similarly, this process will be repeated for the individual session. Scores will be totalled for an overall intervention engagement score.

Participant stage of change. The stage of change each participant is in during the intervention will be assessed by the primary researcher during the individual sessions. Participants will be asked to reflect on their career development behavior and determine their current stage of behavior change. The participants' perceptions will be considered with the researcher's subjective assessment to determine each participant's current stage of change.

Additionally, participants will be asked to identify their current stage of change in regard to career development behavior a part of the CDBS.

Procedure

Intervention description. The proposed life after sport intervention will consist of six group meetings over three weeks and one individual meeting for each participant in the intervention group. Following the suggestions of Wylleman and colleagues (2012), the group meetings will be structured as an educational workshop series on global career development topics including: career exploration, resume and cover letter building, self-marketing, networking, job searching, and interview skills. Specifically, topics will be supported with individual goal setting, opportunities to learn about careers, further career exploration outside of the workshop, opportunities to compare different career options, modeling of effective career decision-making, and personalized feedback through individual sessions as suggested by Brown and colleagues (2003). Each group session will have specific learning objectives related to the topic, contain topic-relevant resources for the participant to utilize, and provide the participants with specific take-home projects they can use to further explore the topic for that session (see Table 2 for a detailed breakdown of each session by topic).

Burton and Raedeke (2008) suggest that mental tools and skills are best learned by breaking the process up into three primary phases (i.e., Education, Acquisition, and Implementation). The structure for each group session will be discussion-based lecture where the participants are encouraged to engage in discussion with the group, share their own career development stories, and ask questions of the facilitator for clarification and further exploration (i.e., Education). Additionally, worksheets and handouts during the group sessions will contribute to the Education phase and allow the participants to practice what they are

learning (i.e., Acquisition). To further the acquisition of career development skills, the individual meetings will be structured as personalized sessions focusing on using the material from the workshops, discussing individual goals, identifying and developing tools to accomplish those goals, and providing student-athletes with support in their life after sport decision-making process on an individual basis. Each participant may be at a different place in their own career development, so individual sessions will be tailored to the needs of each participant. Interventions that utilize both group and individual components have shown to be effective in the career development literature (Brown et al., 2003; Komarraju et al., 2014; Wittmer et al., 1981). Take-home challenges for each group session will provide participants with the opportunity to apply the skills they have been learning and practicing (i.e., Implementation). Furthermore, participants in the intervention group will also participate in a “community of learners” group that will meet for 6-weeks after the intervention is completed. These group sessions will be structured as a peer-support group that will allow participants to have a social support and problem-solving system to enhance their implementation of the skills learned during the intervention. In these follow-up sessions, participants will also evaluate their current career plans and work towards completing relevant career goals to enhance their career development.

Assessment of intervention effectiveness. Upon Institutional Review Board approval, the athletic department will be contacted to attain permission to recruit volunteers for the study from their student-athlete population. Furthermore, the academic support staff in the athletic department will be asked for their assistance in marketing the study to their student-athletes in order to attain the highest possible participation numbers. Once the schedules of the student athletes have been evaluated, they will be sorted into the intervention

and control groups using a matching process while still taking into account the student-athlete constraints to ensure optimal intervention group size.

Student-athlete experimental and control participants will be given the survey instrument pre-intervention. The instrument will contain a general set of anti social-desirability instructions. At the end of the intervention, student-athletes will complete the survey instrument again as the post-intervention assessment, so that there are pre- and post-assessments for both groups. Participants in the intervention group will also be given the survey instrument again six weeks following the intervention at the completion of the “community of learners” meetings. Furthermore, six weeks following the intervention, the researchers will look at how many participants utilized the university career center after the intervention. After the data collection is complete, the control group will be given the opportunity to attend the intervention training program. E-mail addresses for the participants will also be collected for a potential multi-year follow-up survey.

Journal Manuscript Format

A journal format will be used for this dissertation study, in which two manuscripts will be developed to report study findings. Different research questions will be addressed in each manuscript. The first manuscript will examine the intervention effectiveness and discuss the effects and implications of completing a career development intervention for student-athletes. The second manuscript will focus on examining the working model and demonstrating the role of different variables on intervention effectiveness. Other manuscripts may be developed based on the validation of the LASS as a life after sport assessment instrument and establishing construct validity evidence for the instrument to demonstrate intervention effectiveness and mediator/moderator effects on intervention success.

Data Analysis

All data will be collected confidentially and entered into SPSS. Once pre- and post-test data is matched, all names will be removed from the data set. Analysis will be conducted using the SPSS software. Descriptive statistics (e.g., means, standard deviations) will be calculated and reported for all instruments, subscales, and composite scores. Pearson correlation coefficients will be calculated for all subscales and composite scores to examine any relationships between variables. Repeated measures ANOVAs will be calculated between intervention and control groups comparing pre- and post-test scores for all outcome variables. Exploratory factor analysis will be conducted on the scales to ensure proper factor structure on any newly created scales. Cluster analysis (and/or canonical correlation analysis) will be used to investigate possible profiles (or patterns) emerging from the data. Mediation and moderation effects will be examined for all possible variables of interest using a regression approach.

References

- About the NAIA. (n.d.). *NAIA.org*. Retrieved April 26, 2014, from <http://www.naia.org/ViewArticle.dbml?ATCLID=205323019>
- Alfermann, D., Stambulova, N., & Zamaityte, A. (2004). Reactions to sport career termination: A cross-national comparison of German, Lithuanian, and Russian athletes. *Psychology of Sport and Exercise, 5*, 61-75. doi:10.1016/S1469-0292(02)00050-X
- Amiot, C. E., Gaudreau, P., & Blanchard, C. M. (2004). Self-determination, coping, and goal attainment in sport. *Journal of Sport and Exercise Psychology, 26*, 396–411.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.
- Betz, N. E., & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college women and men. *Journal of Counseling Psychology, 28*, 399-410.
- Betz, N. E., Hammond, M. S., & Multon, K. D. (2005). Reliability and validity of five-level response continua for the Career Decision Self-Efficacy Scale. *Journal of Career Assessment, 13*, 131–149.
- Betz, N. E., & Luzzo, D. A. (1996). Career assessment and the Career Decision-Making Self-Efficacy Scale. *Journal of Career Assessment, 4*, 413-428. doi: 10.1177/106907279600400405

- Betz, N. E., & Klein, K. L. (1996). Relationships among measures of career self-efficacy, generalized self-efficacy, and global self-esteem. *Journal of Career Assessment, 4*, 285-298. doi: 10.1177/106907279600400304
- Betz, N. E., Klein, K., & Taylor, K. M. (1996). Evaluation of a short form of the Career Decision-Making Self-Efficacy Scale. *Journal of Career Assessment, 4*, 47-57.
- Betz, N. E., & Klein Voyten, K. (1997). Efficacy and outcome expectations influence career exploration and decidedness. *Career Development Quarterly, 46*, 179-189.
- Betz, N. E., & Serling, D. (1995). *Fear of commitment and career decision-making self-efficacy*. Unpublished manuscript, Department of Psychology, Ohio State University.
- Blustein, D. L. (1999). A match made in heaven? Career development theories and the school-to-work transition. *Career Development Quarterly, 47*, 348-352.
- Brewer, B. W., & Cornelius, A. E. (2001). Norms and factorial invariance of the Athletic Identity Measurement Scale. *Academic Athletic Journal, 15*, 103-113.
- Brewer, B. W., Van Raalte, J. L., & Linder, D. E. (1993). Athletic identity: Hercules' muscles or Achilles heel? *International Journal of Sport Psychology, 24*, 237-254.
- Brown, S. D., & Ryan-Krane, N. E. (2000). Four (or five) sessions and a cloud of dust: Old assumptions and new observations about career counseling. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (3rd ed., pp. 740-766). New York: Wiley.
- Brown, S. D., Ryan-Krane, N. E., Brecheisen, J., Castelino, P., Budisin, I., Miller, M., & Edens, L. (2003). Critical ingredients of career choice interventions: More analyses and new hypotheses. *Journal of Vocational Behavior, 62*, 411-428.
doi:10.1016/S0001-8791(02)00052-0

- Burns, G., Jasinski, D., Dunn, S., & Fletcher, D. (2013). Academic support services and career decision-making self-efficacy in student athletes. *Career Development Quarterly, 61*, 161-167. doi: 10.1002/J.2161 -0045.2013.00044.x
- Burton, D., & Raedeke, T. (2008). *Sport psychology for coaches*. Champaign, IL: Human Kinetics.
- Buyukgoze-Kavas, A. (2014). A psychometric evaluation of the Career Decision Self-Efficacy Scale-Short Form with Turkish university students. *Journal of Career Assessment, 22*, 386-397. doi: 10.1177/1069072713484561
- Cecic Erpic, S., Wylleman, P., & Zupancic, M. (2004). The effect of athletic and non-athletic factors on the sports career termination process. *Psychology of Sport and Exercise, 5*, 45-59. doi:10.1016/S1469-0292(02)00046-8
- Crites, J. O. (1978). *Career Maturity Inventory*. Monterey, CA: CTB/McGraw-Hill.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum Press.
- Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.
- Debois, N., Ledon, A., Argiolas, C., & Rosnet, E. (2012). A lifespan perspective on transitions during a top sports career: A case of an elite female fencer. *Psychology of Sport and Exercise, 13*, 660-668. doi:10.1016/j.psychsport.2012.04.010
- Demulier, V., & Le Scanff, C. (2013). Psychological predictors of career planning among active elite athletes: An application of the social cognitive career theory. *Journal of Applied Sport Psychology, 25*, 341-353. doi: 10.1080/10413200.2012.736444

- Dillinger, R. J., & Landrum, R. E. (2002). An information course for the beginning psychology major. *Teaching of Psychology, 29*, 230-232.
- Drawer, S., & Fuller, C. W. (2002). Perceptions of retired professional soccer players about the provision of support services before and after retirement. *British Journal of Sports Medicine, 36*, 33-38. doi:10.1136/bjism.36.1.33
- Estimated probability of competing in athletics beyond the high school interscholastic level. (2013). *NCAA Research*, retrieved August 28, 2014, from https://www.ncaa.org/sites/default/files/Probability-of-going-pro-methodology_Update2013.pdf
- Foss, C. J., & Slaney, R. B. (1986). Increasing non-traditional career choices in women: Relation of attitudes towards women and responses to a career intervention. *Journal of Vocational Behavior, 28*, 191-202.
- Fouad, N., Cotter, E. W., & Kantamneni, N. (2006). The effectiveness of a career decision-making course. *Journal of Career Assessment, 17*, 338-347. doi: 10.1177/1069072708330678
- Ganske, K. H., & Ashby, J. S. (2007). Perfectionism and career decision-making self-efficacy. *Journal of Employment Counseling, 44*, 17-28.
- Gati, I., Krausz, M., & Osipow, S. H. (1996). A taxonomy of difficulties in career decision-making. *Journal of Counseling Psychology, 43*, 510-526.
- Gati, I., & Amir, T. (2010). Applying a systematic procedure to locate career decision-making difficulties. *Career Development Quarterly, 76*, 301-320. doi: 10.1002/j.2161-0045.2010.tb00180.x.

- Gaudron, J. (2011). A psychometric evaluation of the Career Decision Self-Efficacy Scale – Short Form among French university students. *Journal of Career Assessment, 19*, 420-430. doi: 10.1177/1069072711409713
- Hartman, R. O., & Betz, N. E. (2007). The five-factor model and career self-efficacy: General and domain-specific relationships. *Journal of Career Assessment, 15*, 145-161. doi: 10.1177/1069072706298011
- Irick, E. (2013). Student-athlete participation: NCAA sports sponsorship and participation rates report. Retrieved April 26, 2014, from <http://www.ncaapublications.com/p-4334-1981-82-2012-13-ncaa-sports-sponsorship-and-participation-rates-report.aspx>
- Kadlcik, J., & Flemr, L. (2008). Athletic career termination model in the Czech Republic: A qualitative exploration. *International Review for the Sociology of Sport, 43*, 251-269. doi: 10.1177/1012690208098544
- Komarraju, M., Swanson, J., & Nadler, D. (2014). Increased career self-efficacy predicts college students' motivation, and course and major satisfaction. *Journal of Career Assessment, 22*, 420-432. doi: 10.1177/1069072713498484
- Gati, I., Ryzhik, T., & Vertsberger, D. (2013). Preparing young veterans for civilian life: The effects of a workshop on career decision-making difficulties and self-efficacy. *Journal of Vocational Behavior, 83*, 373-385. doi: 10.1016/j.jvb.2013.06.001
- Lally, P. (2007). Identity and athletic retirement: A prospective study. *Psychology of Sport and Exercise, 8*, 85-99. doi:10.1016/j.psychsport.2006.03.003
- Landrum, R. E., & Mulcock, S. D. (2007). Use of pre- and postcourse surveys to predict student outcomes. *Teaching of Psychology, 34*, 163-166.

- Lotysz, G. J., & Short, S. E. (2004). 'What ever happened to....' The effects of termination from the National Football League. *Online Journal of Sport Psychology*, 6.
- Luzzo, D. A. (1995). The relative contributions of self-efficacy and locus of control to the prediction of career maturity. *Journal of College Student Development*, 36, 61-66.
- Luzzo, D. A. (1996). A psychometric evaluation of the Career Decision-Making Self-Efficacy Scale. *Journal of Counseling Development*, 74, 276-279. doi: 10.1002/j.1556-6676.1996.tb01865.x
- Mallett, C., Kawabata, M., Newcombe, P., Otero-Forero, A., & Jackson, S. (2007). Sport Motivation Scale-6 (SMS-6): A revised six-factor sport motivation scale. *Psychology of Sport and Exercise*, 8, 600-614. doi:10.1016/j.psychsport.2006.12.005
- Navarro, C. M. (2013). Toward an understanding of career construction in the 21st century: A phenomenological study of the life experiences of graduating student-athletes at a large highly-selective Midwestern university (Working Paper). Retrieved from the Center for Leadership in Athletics website:
http://sites.education.washington.edu/uwcla/sites/sites.education.washington.edu.uwcla/files/Navarro%202013_Full.pdf
- Niles, S., & Sowa, C. (1992). Mapping the nomological network of career self-efficacy. *Career Development Quarterly*, 41, 13-21.
- Nilsson, J. E., Schmidt, C. K., & Meek, W. D. (2002). Reliability generalization: An examination of the Career Decision-Making Self-Efficacy Scale. *Educational and Psychological Measurement*, 62, 647-658. doi: 10.1177/0013164402062004007
- Osipow, S. H., & Gati, I. (1998). Construct and concurrent validity of the Career Decision-Making Difficulties Questionnaire. *Journal of Career Assessment*, 6, 347-364.

- Park, S., Tod, D., & Lavallee, D. (2012). Exploring the retirement from sport decision-making process based on the transtheoretical model. *Psychology of Sport and Exercise, 13*, 444-453. doi:10.1016/j.psychsport.2012.02.003
- Patton, W., Creed, P., & Spooner-Lane, R. (2005). Validation of the Short Form of the Career Development Inventory--Australian Version with a sample of university students. *Australian Journal of Career Development, 14*, 49-60. doi: 10.1177/103841620501400308
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J., Tuson, K. M., Briere, N. M., & Blais, M. R. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). *Journal of Sport and Exercise Psychology, 17*, 35-53.
- Prehar, A. C., & Igelzi, D. A. (2012). Reaching psychology majors early about the importance of career planning: A classroom presentation. *Teaching of Psychology, 39*, 125-127. doi: 10.1177/0098628312437695
- Prochaska, J., DiClemente, C., & Norcross, J. (1992). In search of how people change: Applications to addictive behaviors. *American Psychologist, 47*, 1102-1114.
- Ryan, N. E. (1999). *Career counseling and career choice goal attainment: A meta-analytically derived model for career counseling practice*. Unpublished doctoral dissertation, Loyola University, Chicago.
- Reese, R. J., & Miller, C. D. (2006). Effects of a university career development course on career decision-making self-efficacy. *Journal of Career Assessment, 14*, 252-266. doi: 10.1177/1069072705274985

- Reese, R. J., & Miller, C. D. (2010). Using outcome to improve a career development course: Closing the scientist-practitioner gap. *Journal of Career Assessment, 18*, 207-219. doi: 10.1177/1069072709354309
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78.
- Samuel, R. D. & Tenenbaum G. (2011a). How do athletes perceive and respond to change-events: An exploratory measurement tool. *Psychology of Sport and Exercise, 12*, 392-406. doi:10.1016/j.psychsport.2011.03.002
- Samuel, R. D., & Tenenbaum, G. (2011b). The role of change in athletes' careers: A scheme of change for sport psychology practice. *The Sport Psychologist, 25*, 233-252.
- Samuel, R. D., & Tenenbaum, G. (2013). Athletes' decision-making in career change-events. *The Sport Psychologist, 27*, 78-82.
- Schlossberg, N. K. (1981). A model for analyzing human adaptation to transition. *Counseling Psychologist, 9*, 2-18.
- Schlossberg, N. K., Waters, E., & Goodman, J. (1995). *Counseling adults in transition* (2nd ed.). New York: Springer.
- Shahnasarian, M. (1992). Career development after professional football. *Journal of Career Development, 18*, 299-304. doi: 10.1177/089484539201800407
- Sinclair, D. A., & Orlick, T. (1993). Positive terminations from high performance sport. *The Sport Psychologist, 7*, 138-150.
- Stambulova, N. B. (1994). Developmental sports career investigations in Russia: A post-perestroika analysis. *The Sport Psychologist, 8*, 221–237.

- Stambulova, N. B. (2000). Athletes' crises: A developmental perspective. *International Journal of Sport Psychology, 31*, 584-601.
- Stambulova, N. (2003). Symptoms of a crisis-transition: A grounded theory study. In N. Hassmen (Ed.), *SIPF yearbook 2003* (pp. 97–109). Orebro: Orebro University Press.
- Stambulova, N. B. (2010). Counseling athletes in career transitions: The five-step career planning strategy. *Journal of Sport Psychology in Action, 1*, 95-105. doi: 10.1080/21520704.2010.528829
- Stambulova, N. B. (2011). The mobilization model of counseling athletes in crisis-transitions: An educational intervention tool. *Journal of Sport Psychology in Action, 2*, 156-170. doi: 10.1080/21520704.2011.598223
- Stambulova, N. B., & Alfermann, D. (2009). Putting culture into context: Cultural and cross-cultural perspectives in career development and transition research and practice. *International Journal of Sport and Exercise Psychology, 7*, 292-308.
- Stambulova, N. B., Alfermann, D., Statler, T., & Cote, J. (2009). ISSP position stand: Career development and transitions of athletes. *International Journal of Sport and Exercise Psychology, 7*, 395-412.
- Stambulova, N. B., Stephan, Y., & Japhag, U. (2007). Athletic retirement: A cross-national comparison of elite French and Swedish athletes. *Psychology of Sport and Exercise, 8*, 101-118. doi:10.1016/j.psychsport.2006.05.002
- Stark, E. (1985). Life after sports. *Psychology Today, 19*, 57.
- Stoltenburg, A. L., Kamphoff, C. S., & Lindstrom-Bremer, K. (2011). Transitioning out of sport: The psychosocial effects of collegiate athletes' career-ending injuries. *Online Journal of Applied Sport Psychology, 13*.

- Sullivan, K. R., & Mahalik, J. R. (2000). Increasing career self-efficacy for women: Evaluating a group intervention. *Journal of Counseling and Development, 78*, 54-62.
doi: 10.1002/j.1556-6676.2000.tb02560.x
- Taylor, J., & Ogilvie, B. C. (1994). A conceptual model of adaptation to retirement among athletes. *Journal of Applied Sport Psychology, 6*, 1-20.
- Taylor, J., & Ogilvie, B. (2001). Career termination among athletes. In R. N. Singer, H. A. Hausenblas, & C. M. Janelle (Eds.), *Handbook of sport psychology* (2nd ed., pp. 672–691). New York: Wiley.
- Taylor, K. M., & Betz, N. E. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. *Journal of Vocational Behavior, 22*, 63-81.
- Taylor, K. M., & Popma, J. (1990). An examination of the relationships among career decision-making self-efficacy, career salience, locus of control, and vocational indecision. *Journal of Vocational Behavior, 37*, 17-31.
- Tremaine-Drahota, J. A., & Eitzen, D. S. (1998). The role exit of professional athletes. *Sociology of Sport Journal, 15*, 263-278.
- Vaartstra, M., & Burton, D. (2014). *Current student-athlete perceptions about life after sport*. Unpublished manuscript, Department of Movement Sciences, University of Idaho, Moscow, Idaho.
- Van Raalte, J. L., & Andersen M. B. (2007). When sport psychology consulting is a means to an end(ing): Roles and agendas when helping athletes leave their sports. *The Sport Psychologist, 21*, 227-242.

- Warriner, K., & Lavalley, D. (2008). The retirement experiences of elite female gymnasts: Self identity and the physical self, *Journal of Applied Sport Psychology*, *20*, 301-317. doi: 10.1080/10413200801998564
- Wittmer, J., Bostic, D., Phillips, T. D., & Waters, W. (1981). The personal, academic, and career problems of college student athletes: Some possible answers. *Personnel & Guidance Journal*, *60*, 52-55.
- Wolff, R., & Lester, D. (1989). A theoretical basis for counseling the retired professional athlete. *Psychological Reports*, *64*, 1043-1046.
- Wooten, H. R. (2005). Healing into life after sport: Dealing with student-athlete loss, grief, and transition with EFT. *Journal of Creativity in Mental Health*, *1*, 89-102. doi:10.1300/J456v01n03_06
- Wylleman, P., Alfermann, D., & Lavalee, D. (2004). Career transitions in sport: European perspectives. *Psychology of Sport and Exercise*, *5*, 7-20. doi:10.1016/S1469-0292(02)00049-3
- Wylleman, P., Lavalley, D., & Alfermann, D., (Eds.). (1999). *Career transitions in competitive sports*. Biel: FEPSAC.
- Young, J. A., Pearce, A. J., Kane, R., & Pain, M. (2006). Leaving the professional tennis circuit: Exploratory study of experiences and reactions from elite female athletes. *British Journal of Sport Medicine*, *40*, 477-483. doi: 10.1136/bjism.2005.023341