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Table of Contents

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Mission and Purpose

The overarching mission of the Journal of Amateur Sport (JAS) is to provide scholars an outlet in which to share scholarship relevant to the amateur sports realm. We define amateur sport as those who participate and govern at the youth, recreational, community, international, and intercollegiate level. We acknowledge the tenuous debate surrounding the amateurism of intercollegiate athletics, thus at this time we welcome examinations that are focused on the less commercialized avenues of college sport participation and governance (especially NCAA Division II, III, and other less publicized governing bodies and settings). Submissions from all disciplines are encouraged, including sociology, communication, and organizational behavior. Similarly, we welcome a wide array of methodological and structural approaches, including conceptual frameworks, narratives, surveys, interviews, and ethnographies.

As an open-access journal, submissions should be of interest to researchers and practitioners alike. In all, the content published in JAS should advance the collective understanding of the participants, coaches, administrators, and/or institutional structures that comprise amateur sports worldwide. We challenge authors to submit creative and nontraditional manuscripts that are still high-quality in nature. Authors are encouraged to email the editors before submitting if they are unsure if their manuscript is a proper fit within JAS.

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Exploring the Information Source Preferences Among Canadian Adult Golf League Members

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With an aging demographic, and the abundance of physical inactivity in Canada, sport professionals need to understand how best to recruit and retain adults in sport and recreational activities, namely, golf leagues. Canadian golf league participants (N = 419; Mage = 62 years old) completed an online survey detailing their propensity to utilize a variety of information sources prior to making the decision to join a golf league. Results following a confirmatory factor analysis of a revised Information Sources Inventory, suggested that golfers in this sample were most likely to utilize Personal and Social sources of information associated with their league participation decision. While no differences emerged in information source preferences across Age or levels of Involvement, women (m = 4.12, SD = 1.30) were significantly more likely to utilize Public information sources than were men (m = 3.64, SD = 1.26). Implications from the information source preferences are discussed with the goal of generating more effective marketing strategies to recruit new golfers, lapsed golfers, or golfers who do not currently engage in league play.

According to a recent Canadian golf consumer behavior study, golf is a popular sport in Canada, however the sport has not seen recent growth (Navicom, 2012). There are approximately 5.7 million golfers in Canada, and an equal 18% are both new and lapsed golfers (i.e., golfers who do not currently play but may return, or no longer play golf altogether; Navicom, 2012). According to this study, the majority of golfers in Canada are male (70%), well educated (62% are post-secondary graduates), and have high annual household incomes (42% above $75,000).

The benefits listed as drivers of engagement and spending include things

like socializing with friends and family, enjoyment of the game, and membership in a golf community (e.g., club membership, understanding of rules and etiquette, dress codes; Navicom, 2012). There is however a downward trend suggesting that as Canadians age, they become more likely to lapse or leave the game, which is supported by a large portion of the research related with leisure activity across the lifespan (Edginton, DeGraef, Dieser, & Edginton, 2006; Lera-Lopez & Rapun-Garate, 2011). It is important for golf managers, therefore, to both attract young players to the game, and show them what the game has to offer, but also to foster golfers across their lifetime to retain participants. At 18–25 years old, participants in this Canadian report were more excited about the game and playing more often, as compared with the 26–35 year old group, who showed an ambivalence to the game, and finally the 46–59 year old group who were "disillusioned with the game, leaving the game, or expressing disappointment" (Navicom, 2012, p. 23). Some general suggestions offered in the Navicom (2012) consumer behavior study included getting new players excited about the game, helping players to grow and improve their game, and showing players the value of the game.

Financially speaking, those who were more engaged (i.e., played, followed, supported, and endorsed the game) also spent more money on the game (Navicom, 2012). Of the people surveyed in Canada, only 25% were engaged consumers, while the other 75% reported ambivalence toward the game. This gap reflects a high capacity for growth within the group of current golf customers, which could result in ample lucrative rewards for golf clubs and the golf industry. Specifically, the golfers sampled for this study showed a decrease in the consumption of golf lessons (-12%), golf travel (-8%), and club membership dues (-4%), all of which should be of concern to club professionals who earn much of their revenue through these areas of spend (Navicom, 2012).

Being that golf is a sport that can be pursued at any age, there are financial interests for the golf industry to keep golfers playing more and longer, but also important societal benefits by promoting physical activity across the lifespan. Marketers within the golf industry should evaluate their communication and advertising strategies to appropriately recruit their market of adult golfers. As an initiation of this exploration, the focus of this study was to examine the information source preferences (e.g., web sources like "look to information provided by the host club's official website") reported by adult golf league members, in an effort to better understand future golf league participant recruitment strategies. This study further explored whether differences in information source preferences existed across golfer groups (i.e., sex, age, league involvement).

Information Sources

Raitz and Dakhil (1989) pointed out that awareness and behavioral response depend directly on the availability of information and the credibility of its source (p. 45). Therefore, from the position of the recreational services provider, it is imperative that prospective participants have access to a variety of effective and convincing information. While the marketing manager, or club professional in the case of golf leagues, has the power to distribute commercial advertising material, there are additional sources of information that customers have the ability to utilize during their pre-purchase information search. In addition to traditional advertising, Kotler and Armstrong (1994) have outlined four more general information source categories that a consumer has the opportunity to consult and utilize prior to purchase decisions. These sources include: (1) personal, which includes people close to the person, such as family, friends, or information social networks, (2) commercial, which refers to the marketer-dominated sources, such as a golf course or recreation department's programming guide, (3) public, including neutral sources of information like newspapers, or magazines, and (4), experiential, which includes direct observation or product trial.

Web-based marketing is a promising new-media source that can be utilized by businesses seeking better engagement with potential customers. E-communications have emerged out of the "IT-revolution" and are now considered "integral to marketing communications strategies" (Hede & Kellett, 2011, p. 990; Holm, 2006). Wyner (2000) suggests that the increasing digitalization of society will make it progressively easier to alter particular aspects of service quality through rapid customer response and feedback. Kim, Lehto, and Morrison (2007) reported that the "Internet has gained considerable importance as a communicative and adaptive means of sharing and disseminating information" (p. 426). These authors additionally note that digital media is affecting the information environment and consumer behavior in an unprecedented way as a result of the uniqueness that comes with such a platform. Specifically, they point out that "the Internet offers speed of access, scope of access, provisions of interactive assistance and flexibility in representing information" (Kim et al., 2007, p. 426). Consumers are now able to not only gather their own information from online sources, but past customers can also circulate their own feedback on an experience using online platforms including websites, blogs, and social media (Mortimer & Pressey, 2013).

The extent to which a prospective consumer utilizes one or a combination of these sources is dependent upon how well any of the given sources is able to minimize the perceived risks associated with the purchase decision. Mortimer and Pressey (2013) point out that paramount in

evaluating these information sources is that service providers ensure that each of these information sources or communication channels work together to provide consistent messaging to consumers.

Information Processing

After a consumer has decided on the source(s) to utilize during their pre-purchase information search, they will interpret these communications through a mental process before any behavioral outcome is reached. Finne and Strandvik (2012) explained that consumers first create meaning from the messages received, by relating the content with other information about the company or their offering, as well as with other information that is associated with the context. In the case of marketing a golf league, a marketing message would be sent out to prospective consumers, which would then be interpreted by the potential consumer in relation to the other activities offered by the course, such as tournaments, socials, or general rounds of golf. The message would then be compared with how this marketing content relates with other recreational activities in the community or that are personally relevant to the consumer.

The interpretation of this message can also be altered based on the category of marketing communication the message stems from. With regards to media acquisition and processing, research suggests "the greater the degree of perceived risk in a pre-purchase context, the greater the consumer propensity to seek information about the product" (Murray, 1991, p. 10). Also of interest from previous research in this field, is that through both theory and evidence, due to the intangible characteristics of services, purchase decisions related with services have been perceived to be riskier than product goods (Mortimer & Pressey, 2013; Murray, 1991). Being that golf leagues fall closer to a service than they do a tangible product, it is possible that this activity would be perceived with greater risk than other purchase decisions. In addition to seeking to lower the risk in the purchase decision, some authors have suggested that effective pre-purchase searches enable better choices, increased product and market expertise, and ultimately a higher satisfaction with the purchase (Bloch, Sherrell, & Ridgway, 1986). These are all desirable traits for a marketer who is seeking satisfied and retained customers.

An additional consideration is provided by Murray (1991), who noted that in the case of services, product evaluation may occur *after* the purchase and consumption; this extends the notion that pre-purchase assessments of the service may be more risky, because the service benefits are not yet clear to the prospective consumer. Where the risks of a 'poor' decision are actually minimized during the information acquisition or pre-purchase stage, through clear and effective marketing communication, sport managers can assume that increased participation and purchasing of the service will occur.

Gender or sex is a final consideration marketers should be cognizant of while assessing the information search and processing behaviors of their prospective consumers. Gender has been applied as one of the most common forms of segmentation in marketing research, specifically with respect to advertising (Kim et al., 2007). Meyer-Levy and Sternthal (1991) found that men were more likely driven by the overall themes of a message, while women were more likely to engage in an elaboration of the message content. Men, similarly, are considered "selective processors," who, in other words, do not engage in a comprehensive assessment of all information before making a decision (Meyer-Levy & Sternthal, 1991). Instead Kim et al. (2007) suggest that men rely on "various heuristics" or cues, rather than detailed messaging (p. 425). Women, in contrast to this, have been found to be "comprehensive processors" who try to compile all information before making a decision (p. 425). Kim et al. (2007) also suggest that women give equal weight to self- and other-generated information, or as Murray (1991) has labeled them, *internal* and *external* information sources.

Marketing Communication and Involvement

Involvement with a product or service has been found to relate to several elements of information acquisition and processing. It can affect the scope of the information search, the information sources used, and the number of decision criteria necessary (Bienstock & Stafford, 2006). Zaichkowsky (1985) assessed marketing communication in relation to involvement and found that consumers responded differently to communication messages based on their level of involvement with the product. Involvement, in this sense then, is concerned with the focus on personal relevance. Where information is perceived as personally relevant, individuals are also likely going to pay closer attention to and utilize that information (Kim, Scott, & Crompton, 1997). A person can be involved with advertisements, with products, or with purchase decisions, and all of such involvement has been hypothesized to "lead to greater perception of attribute differences, perception of greater product importance, and greater commitment to brand choice" (Zaichkowsky, 1985, p. 341). While this is in reference to a product example, Zaichkowsky (1985) has suggested that her framework was designed to be context-free and thus applicable beyond product advertising.

Zaichkowsky (1985) proposed that the inherent differences between potential customers would result in differences in interpretation and response to messages. Providing marketing materials which are more detailed in nature can benefit highly involved consumers, while less informative media strategies, such as broadcast media can be attractive sources of information for low-involved consumers who are looking for familiarity over depth of content

(Bienstock & Stafford, 2006). Bienstock and Stafford (2006) also point out that convenience and accessibility are principal considerations for the low-involved consumer, which should be considered by marketers looking to attract both high- and low-involved consumers. Supporting this concept empirically, Edgett and Cullen (1993) found that consumers' information search for university preference decisions differed across levels of involvement. Looking specifically at service marketing, Gordon, McKeague, and Fox (1998) also found that the level of involvement was significantly related with the effectiveness of their relationship marketing tactics.

A final point of consideration in understanding the role of involvement in marketing communication was established by Park and Young (1983), who suggested that the involvement construct could be divided into either cognitive or affective involvement. This underlying involvement can result in consumers' reception to various forms of advertisement messages. Someone who is more affectively involved may be more apt to utilize an emotional or affective advertisement message, as compared with a cognitively involved person who might conversely be seeking a functional and informative message (Bienstock & Stafford, 2006). Adding to this concept, Shavitt (1990) posited that, where people used a product or service for more utilitarian reasons, they would be persuaded by more utilitarian appeals. By assessing the cognitive versus affective levels of involvement, researchers can provide a more detailed communication strategy that aims to meet the needs of both cognitively and affectively involved consumers.

Understanding the information search, from the number of sources, types and platforms of those sources, and the content of the sources is important for marketers and managers within the sport service industry. Minimizing risks, by providing accessible and informational material, can help to better inform prospective consumers and better prepare them for the activity of interest, which should ultimately help to recruit and retain golf league members.

The purpose of this study was to explore the preferred information sources utilized by adult golfers to better understand how managers can best attract, and ultimately maintain members in their club golf leagues. These preferences were examined as they relate with age, sex, and cognitive and affective involvement to extend the marketing communication literature. Together, these findings can offer golf managers empirical evidence of how to recruit golf league members. The following research questions were used to guide the study:

Q1 What is the factor structure in pre-purchase information search behaviors reported in this sample?

Q2 What are the preferred information sources among participants and how do

preferred information sources differ across the lifespan (age), by sex, or by involvement toward the league?

Methods

Participants

Online data collection took place between January 22 and March 2, 2014, resulting in the completion of 426 surveys. While 587 participants started the survey, only completed surveys were retained for analyses, which resulted in a 72.4% completion rate. Responses from participants who started the survey but dropped out before the survey was complete were eliminated from analyses using listwise deletion (Schafer, 1997). The demographic questions were placed at the end of the questionnaire, and therefore it was impossible to evaluate whether there were trends in regards to the people who dropped out of the survey, as compared with those who finished the survey.

The final sample was predominantly male (61.1%, n = 256) and White (95.7%, n = 399), where any other ethnicity was represented by five participants or fewer. The average age of participants was 62 years old. In fact, 88.0% (n = 368) of participants in this sample were 50 years and older. The approximate annual household income for participants in this sample was spread similarly between $50,000 and $74,999 (20.8%, n = 80), $75,000 and $99,999 (20.3%, n = 78), and $125,000 or higher (22.9%, n = 88). This spread of incomes may be tied with the mean age variable, in that people who are between the ages of 50 and 65 may earn higher incomes, but also in relation to marital status, where the majority of the participants (73.8%, n = 307) reported being married, both with children (56.6%, n = 237) and without (16.8%, n = 70). See Table 1 for a more detailed breakdown of the sample's demographics.

In terms of golf participation, the majority of this sample played in golf leagues located in Saskatchewan (44.4%, n = 186) and British Columbia (37.7%, n = 158), while the remainder of participants played in Alberta (14.3 %) and Ontario (3.6 %). Participants had a similar split in their playing ability as was measured by their handicaps (see Table 2). Much of this sample had played in their current league for 11 or more years (38.9%, n = 163), while 32.2% (n = 135) had been in the league for three to six years. Despite the variance in time spent participating in the golf league, the overwhelming majority of participants in this sample (88.9%, n = 368) had been playing golf for more than 11 years.

With reference to spending money on food, beverage, or proshop items during an average league day/night, participants reported spending between $11 and $25 (36.2%, n = 151) and between $0 and $10 (19.9%, n = 83). Spending differences between men and women were detected using a chi-square test of independence (Pearson chi-square = 11.29 (5, N = 417), p < .05). A further review of the adjusted standardized residuals indicated that higher spending was associated with men, while

lower spending was associated with the women in this sample. More specifically, women overrepresented the lower spending bracket spending between $0 and $25, while men overrepresented a higher spending bracket ($26–$40) on food, beverage, and proshop items per league night (see Table 3).

Design and Procedure

The design for this study was a cross-sectional, survey-based design. Convenience sampling (Lohr, 2008) was employed to ensure that sufficient data were collected, particularly given that data collection was conducted during the off-season for most golf clubs in Canada.

Following approval from the university's institutional review board, provincial golf associations from each province (e.g., Alberta Golf) were solicited for participation in this study. Once a governing body agreed to distribute the survey, a script to participants along with a link to the online survey, hosted by Qualtrics, was sent to the association directors. The script to participants followed Dillman, Smyth, and Christian's (2009) recommendations to include an introduction to the study's purpose, anticipated time required to complete the survey, notice that the participation is voluntary, contact information to the researchers, and lastly, an embedded link to the online survey. Directors then sent both the script and survey link to their club membership lists via e-mail.

Instrumentation

The web-based survey for this study included four sections, with a total of 42 items: 17 items measured sources of information, 10 items measured involvement, and 13 demographic questions and two open-ended questions asking participants to (1) describe their personal reasons for participating in the golf league and (2) offer suggestions as to how the league could be improved. The two open-ended questions were not analyzed in this study, but rather collected to offer golf directors with qualitative feedback for their leagues. An informed consent form was embedded into the first page of the survey, which required that respondents click "agree" before moving on to the survey items.

Information Sources Inventory. The Information Sources Inventory was developed by Murray (1991) to serve as a measurement tool to determine the types of information consumers were using in purchase decisions. The four information sources include: (a) personal direct observation and experience; (b) the advice of social sources, including family members, significant others, friends, and acquaintances; (c) mass media or marketing sources; and (d) editorial or neutral sources (Murray, 1991). An example of an item for the personal direct observation information source would assess whether the participant would "ask to try or sample the product before purchasing." These factors correspond with Kotler and Armstrong

(1994) who categorized information sources into (a) personal, (b) experiential, (c) commercial, and (d) public. Each of the 17 items were measured using a 7-point Likert-type scale, with anchors ranging from 1= *definitely would not* to 7 = *definitely would*. Higher scores therefore reflect a higher propensity that a participant would utilize that source of information in a purchase decision (Murray, 1991).

Given the continual emergence of new information sources, especially since the original development of the scale, items were added and modified to account for known additions since the 1991 scale (i.e., online and social media information sources). The addition and modification of scale items was deemed appropriate given the contextual nature (i.e., recreational golf league) of the specific information sources (e.g., newsletter from golf club) a prospective consumer would use to gather information. A confirmatory factor analysis will be used to assess the reliability and validity of the added and modified items.

Involvement. To compare participants' preferred information sources with their level of involvement, as the literature has suggested, the revised 10-item Personal Involvement Inventory (PII; Zaichkowsky, 1994) was included in the survey. The PII is designed to measure a person's involvement with a product, through the measurement of a person's emotional and cognitive involvement. The 10 items were measured on a 7-point semantic differential scale, which uses adjectives and their antonym as terms to describe the golf league. These adjectives were used to assess respondents' judgments toward the golf league using the two dimensions of cognitive and affective involvement (Zaichkowsky, 1994). Affective involvement was measured using the items: interesting, exciting, appealing, fascinating, and involving, while the items measuring cognitive involvement included: needed, important, relevant, means a lot, and valuable. Scores in the bottom 25% of the semantic differential scale were categorized as highly involved participants, while the highest 25% were categorized as having a low level of involvement with the league. The remaining 50% fell into the medium involvement category. This procedure is consistent with Zaichkowsky's (1985) original use of the Personal Involvement Inventory measure. The scale has been used primarily to assess product involvement, but studies (e.g., Celuch & Taylor, 1999; Stafford & Day, 1995) have also extended to use the PII in relation to services, which have had strong internal consistencies using Cronbach's alpha coefficients (i.e., > .90; Reinecke Flynn & Goldsmith, 1993).

Demographic and Golf Variables. Demographic questions were asked to both effectively describe the sample and to test for group differences in information preferences. Sex, age, ethnicity, golf club and province where golf league was offered, annual household income, years played in the league, and years playing golf were included to describe the sample.

Participants were also asked to report the amount of money they spent per league night on things like food and beverage items as well as the price they paid to enroll in the golf league itself. Finally, players were asked to report their handicap to indicate their golf skill level. The handicap system is a "numerical measurement of a player's potential (not actual) scoring ability on a course of standard difficulty" (Rules and Handicap, 2013). The purpose of the handicap is to allow golfers of varying skill levels to compete on an equitable basis. For those participants who didn't know what their handicap index was, an open ended follow up question asked participants to write down the average score they shot on 9 or 18 holes and was then converted by the researcher to the appropriate index category. This conversion was only necessary for 17 participants.

Data Analysis

Data were screened for instances of missing data and any evidence of satisficing or careless responding (Krosnick, Narayan, & Smith, 1996). Due to the settings on the online survey, which forced respondents to answer questions for the key variables of interest, the only cases of missing data were on some of the descriptive items that allowed participants to choose not to respond (e.g., income).

All statistical analyses were conducted using SPSS 20.0 (IBM Corp., 2011) and Mplus 7.11. In order to answer the research questions in this study, the following statistical techniques were employed and examined: analysis of the descriptive statistics, Pearson correlation coefficients, reliability analyses, multiple analyses of variance (MANOVA), and confirmatory factor analysis (CFA). CFA is distinct from EFA in that it allows testing of an a priori hypothesis between observed and latent variables (Jackson et al., 2009). In this case, the modifications to Murray's (1991) Information Source Inventory were done with theoretical assumptions about how the items should load and relate with the factor categories. For example, the three items that were added to the original Murray (1991) scale and included a web platform were expected to load in the "web" sources factor, meanwhile, the other three factors were designed to align with Murray's (1991) scale.

The CFA was used to verify the factor structure and item performance within latent information source constructs. A variety of indices were explored to determine model fit per recommendations from Hu and Bentler (1999). A root mean square error of approximation (RMSEA) was used to assess the difference between the observed covariances and model-implied covariances, where an RMSEA less than .08 was considered a good model fit and a value below .05 was considered excellent. To further demonstrate model fit, the Comparative Fit Index (CFI) and the Goodness of Fit (GFI) were assessed, where a value exceeding .90 would be deemed acceptable model fit and a value exceeding

.95 would indicate an excellent model fit (Hu & Bentler, 1999). Lastly, average variance explained (AVE) values were examined to reveal the discriminant validity between factors in the model. An AVE greater than .50 indicates convergent validity, while an AVE greater than the squared correlations with other factors suggests discriminant validity (Fornell & Larcker, 1981).

Once the factor structure was established, a MANOVA was run to assess differences in the mean scores on each of the preferred information sources across age, sex, and league-involvement. Since the MANOVA reports only whether differences between groups exist or not, univariate ANOVAs were utilized to determine where these differences existed (Tabachnick & Fidell, 2007).

Results

Results from this study reflect the sentiment and experience by older adult golfers (*mAge* = 62 years old) who have predominantly been playing golf for more than 11 years (88.9%) (see Table 1 and 2). Only 38.9% of these participants have pursued a golf league for more than 11 years, which demonstrates an opportunity for growth in converting casual golfers into an organized golf league for sustained participation across the lifespan.

To get a better sense of how participants are recruited to golf leagues, the first research question sought to examine the factor structure in the Information Sources Inventory with the addition and modification of items to reflect new media sources potentially used to recruit golf league participants. A CFA was conducted to confirm the factor structure of the proposed information sources preferred by recreational golf league participants. The first model that was tested utilized a 4 factor, 16 item scale: Personal (three items), Social (three items), Web (three items), and Public (seven items). The four-factor model indicated moderate fit (CFI = .86, GFI = .87, RMSEA = .097). As a result, an inspection of the modification indices was conducted to determine if improvements to the model could be made by eliminating poor performing items or by unconstraining coefficients. Kline (2005) indicated that model fit can be weakened due to 1) unusually high or low covariances between items within a factor, 2) unusually high covariances between an item and items indicating other factors, and 3) items sharing too similar wording and interpretation. This process revealed two items with particularly high modification indices, prompting the removal of the items loading on the latent construct "Public Information." It is possible that the two items did not properly fit the Public information source because the items (e.g., "Read available information such as printed brochures, pamphlets, or other information provided by the host club") did not apply to that golf league, and or were not associated as public sources of information. With the removal of the two items, a second four-

factor model showed improved indices (CFI = .90, GFI = .91, RMSEA = .087). The AVE estimates indicated that there was adequate discriminant validity between the Personal (.55) and Public (.51) factors, while Social (.41) and Web (.47) had slightly lower AVEs. The final four-factor model can be seen in Figure 1. This model also highlights the items that were modified or added to the Murray 1991 inventory.

Reliability analyses were conducted on the final four-factor model to ensure reliable factors could be compared for further analysis in the study. In addition to having a lower AVE, the Social sources of information subscale had the lowest Cronbach's alpha coefficient of all the variables in the study at α = .68 (see Table 4). Originally, the factor structure suggested four items belonged to the Social factor; however after assessing the reliability of these four items together, the reliability was α = .62. The "Cronbach's alpha if item deleted" statistic suggested that the removal of the item "try to remember what friends do as an alternative to participating in this golf league" would increase the reliability coefficient to α = .68. Therefore, the fourth item from the Social sources factor was removed from the factor. The α = .68 is still below the desired .70 alpha coefficient level, and should be interpreted with caution. The researchers decided to keep this factor in the analyses given the exploratory nature of applying this scale to further understanding the information source preferences among Canadian golfers.

Items for each of the final information source factors can be seen in Figure 1. Generally, the factors include the following four types of information: Personal- information derived from previous personal experiences with the activity; Social- information derived through communication from trusted personal sources including friends and other members of the golf club; Web- information collected online including social media and the golf club's website; and Public- information collected from a public source, like a third party review or newspaper advertisement for the activity.

Following the distinction of the four factors of information sources utilized by prospective golf league participants, the second research question explored the extent to which each of the information sources were reported being utilized prior to making a golf league participation decision and then how these preferences sources differed across the lifespan (i.e., age), by sex, and across levels of involvement (i.e., high, medium, low, in both cognitive and affective involvement).

A test of any interaction effects was assessed first, to determine whether any significant interactions between variables existed. Where no significant interactions were detected, a main-effects MANOVA was conducted to answer the second research question. Overall, participants in the full sample reported similar levels of involvement (i.e., both cognitively (*M* = 11.59; *SD* = 5.01) and affectively *(M* =

12.30; *SD* = 4.99)) toward the golf league. In terms of information source preferences, the sample reported being most likely to utilize Personal (*M* = 5.29; *SD* = 1.13) and Social (*M* = 4.89; *SD* = 1.31) sources of information prior to making a golf league purchase decision. The means, standard deviations, reliability coefficients, and Pearson's Correlations for information source preferences and both cognitive and affective involvement can be seen in Table 4.

Given that MANOVAs can be sensitive to the presence of multivariate outliers, the Mahalanobis Distance between independent variables and a chi-square critical value were used to check for the presence of outliers (Tabachnick & Fidell, 2007). Three outliers emerged from this analysis, which prompted running the MANOVA both with and without the outliers. When similar results emerged from both tests, the outliers were removed from the subsequent analyses. In conducting a factorial MANOVA to test for interaction effects, there were no significant differences detected in the interactions between preferred information sources across Age, Sex, or levels of Involvement (cognitive and affective). A MANOVA testing the main-effects was then conducted to determine that only Sex emerged as a significant effect in information source preferences at the 99% confidence level (see Table 5).

A further look at the between-subjects effects suggested that the only significant difference existed in the propensity to use Public information sources across Sex ($F(1, 418) = 9.730$, $p < .01$, partial eta squared = .025). A look at the descriptive statistics for information source preferences between men and women indicates that women (*M* = 3.94, *SD* = 1.39) were significantly more likely to utilize Public information sources than were men (*M* = 3.51, *SD* = 1.36). Both sexes were likely to utilize Personal and Social information sources ahead of Public information sources according to their mean differences as reported in Table 6; however, significant differences emerged only on the Public information source variable.

Discussion

This study sought to increase the understanding of how adult recreational golfers are recruited to their respective golf leagues, which involved expanding upon Murray's (1991) Information Sources Inventory to determine what information sources adult golfers used in making a decision to participate in a golf league. While the results from this study are applied directly to adult golf league recruitment, this study also provides insights to marketers and management of other recreational opportunities. Little research examines the ways in which adults are recruited to recreational sport opportunities. This study provided insight into how some adults gather information prior to joining a golf league, but it is plausible that trends exist across activities, dependent upon the types

of information sources available to these adults.

According to Statistics Canada (2013b), golf has been Canada's most participated in sport since 1998. While the sport saw impressive growth from the early 1990's into the millennium, this growth has been stagnant in recent years. The pool of current players and the prospect for continued growth, however, provides great potential for golf clubs and league directors seeking to increase participation through effective golf league operations. With such a prevalence of physical inactivity across North America, exploring the modes through which adults are recruited to these golf leagues is a timely investigation. Results from this study will serve to inform both golf managers, but also the management practices of other recreational sport activity managers seeking to improve recruitment strategies for their respective memberships. Recreational sport programmers should consider what current and past members are saying about their experiences, as it seems that new participants are using both their own personal experience and the word from trusted friends to make a participation decision.

The first research question explored the factor structure of the information source preferences that adults used to seek information about their golf leagues. Following the elimination of two items, one that loaded similarly on two factors, and another that prompted poor reliability, results from the CFA suggested adequate model fit with a 4 factor, 14 item scale. Being that the recreational golf context was a new one to examine information source preferences, the researchers felt that it was important to include this factor in analyses to further understand the items within the information source scale, as well as to get insight on the types of information that recreational golfers seek prior to participating in a golf league. The social items like "paying attention to what previous participants of the activity had to say" has the potential to really impact future golf or other recreational activity recruitment strategies. While the items need improved to collectively serve as a "social" factor, readers of this study should interpret the findings related to this scale with caution, and future researchers should improve this factor.

The factor structure with this sample in the context of golf league information search behaviors replicated some of the original Information Sources Inventory (Murray, 1991) factor structure, but also included a new factor, which was titled "Web" sources. Murray's (1991) Information Sources Inventory originally separated the factors "impersonal advocate, impersonal independent, personal independent, personal advocate, direct observation, personal experience, and outright purchase" (p. 16). In this study, the advocate and independent were organized together into the impersonal (public), personal, and social, while web items were

separated. Public, Personal, Web, and Social were the final factor names assigned to each group of items. These names were designed to align as closely as possible to the previous literature, while still reflecting the breakdown of items in this sample.

Results from this study puts emphasis on the mode with which marketing communication is disseminated (e.g., print vs. online), in addition to from whom the information stems (e.g., marketing from within the club vs. neutral sources), which relates to golfers' propensity to utilize the source. The Web sources factor was comprised of items related to social media outlets derived from others, from the host club, and the host club's official website. There was one other item ("Look to a website from a neutral source to read about the activity"), which loaded on the Public information source, rather than the Web source factor. The Web source factor on the other hand included social media platforms, both from the club and from others, as well as the host club's website. This may relate back with the idea that people often rely more heavily on Personal information sources in situations where greater risk is perceived (Mortimer & Pressey, 2013; Murray, 1991). It is the combination, therefore, between mode and source of information, which relate with a golfer's propensity to seek and utilize the information.

While this scale included a Web information source factor, this source of information was the least utilized source of information by this sample. It is possible, that in this sample with a mean age of 62 years old, the older adults may be less likely to use web sources because they haven't had to rely on these sources in the past, or because they do not currently have the technological literacy to know how to or want to find information online to pursue a recreational golf or other leisure opportunities. Furthermore, web sources which come from a public or neutral source may be evaluated and utilized differently than web sources from personally known and trusted sources.

This finding may not be the case for all golf league participants, but may in large part be due to the current availability of such information sources regarding golf leagues. Not all of the information source items included in the revised Information Sources Inventory may be applicable to current golf league marketing communications (e.g., host club's Facebook page). The survey measure did not allow for a "not applicable" answer, which may have been appropriate for some these items where golfers may be likely to utilize the source in other contexts, but do not know of such information sources in relation to golf leagues. Without the "not applicable" option, the courses that do have a social media platform may have a false sense of the lack of effectiveness derived from this information source, due to the data reported by golfers who would be "unlikely" to utilize the source because it is a non-existent form of communication in their golf league.

Similarly, golf leagues may be under-utilizing formal marketing communication materials altogether, and new media channels in particular, which would minimize the clarity with which participants answered regarding their likelihood to use these sources of information. Without the inclusion of an option to report which sources of information are available surrounding the golf league, and then asking about the propensity to utilize such information sources, this measure does not provide the full picture of actual information source effectiveness.

In order to develop sound marketing and advertising strategies to attract new and previous golf league members, the second research question aimed to clarify information source preferences among groups (i.e., age, sex, involvement). Some leagues are designed specifically for women, or specifically for seniors. Understanding differences within these subgroups, therefore, may be useful to targeted marketing campaigns. As previously indicated, involvement, which refers to the personal relevance a consumer has with a product or service, has been regarded as one of the most important determinants of consumer behavior (Broderic & Mueller, 1999; Zaichowsky, 1994). An understanding of the differences in how various groups of people seek information can inform specific marketing communication practices, resulting in the most efficient and effective communication practices aimed at recruiting golf league members.

The current sample reported being most likely to utilize Personal and Social information sources versus the more marketer-dominated sources of information. This finding confirms previous marketing communication literature, which suggests that consumers prefer personal or experiential sources of information in relation to the purchase of a service (Mortimer & Pressey, 2013; Murray, 1991). There are several possible explanations for this trend. First of all, the overwhelming majority of these participants had played golf for more than 11 years, while the majority had also belonged to their current league for three to 10 years. When people have been around the sport, and specifically the league, it makes sense to think that they would also have personal (previous experiences) and social (friends, significant others) resources to draw upon for information regarding the league. Meanwhile, these same people would be less likely to utilize Public or Web marketing materials as sources of information used to decide to join a particular league.

Secondly, it has been generally acknowledged that a high level of perceived risk necessitates a greater dependence on personal sources of information such as friends or significant others rather than via impersonal sources (Mortimer & Pressey, 2013; Murray, 1991). A golf league requires an extended time commitment, generally over the course of several weeks or months,

which increases the risk behind the "purchase" decision of joining the league when compared with less risky purchase decisions like the purchase of a golf product. In addition to the time commitment, many golfers reported spending between $0 and $100 ($n$ = 284; 66.7%) to join the golf league, while the remaining 138 (33.3%) league members reported spending between $101 and more than $400 to join the league, which increases the financial risk in the purchase decision. It would seem prudent for managers of golf leagues to consider disseminating league information (i.e., marketing communication) prior to, as well as during league play.

Golf league participants may rely more on Personal and Social information sources because, while golf courses and country clubs as a whole utilize a wealth of traditional marketing tactics, the golf leagues at these golf courses do not generally devote time and resources to traditional marketing tactics, such as mass or broadcast media, but rather do a lot of internal marketing, relying on word-of-mouth from current or previous league members, and perhaps golf club newsletters. This is a gap in marketing strategy, which should be corrected by expanding marketing efforts beyond internal marketing and out into the local community to promote the recruitment of new golfers, lapsed golfers, or golfers from other golf courses who may not have access to a league at their current or most frequented golf course. Many of the participants who took this survey were not members of the club in which their golf league was hosted. Some of these included city golf courses, which are open to the public, and do not have memberships, but for the others who may not be members of a course, but would like the benefits of scheduling regular golf outing, advertising outside of the golf course becomes relevant and warranted.

In addition to exploring this sample's golf experience in relation to the information sources preferences, this sample was representative of an older sample where 88% of the sample was 50 years and older. It is possible that this lack of diversity in age within the sample demonstrates a bias on the types of information sources most utilized by golf league members. It may also be reflective of the age bracket of adults participating in these scheduled golf leagues across Canada. Little research has examined the information search preferences within the sport and recreation literature, so further exploration of this topic with a more diverse age breakdown could be useful in getting a better understanding of age-targeted marketing material in recreational situations.

Related to information source preferences between the sexes, Kim et al. (2007) advised that women have been found to be "comprehensive processors" who try to compile all information before making a decision (p. 425). Both men and women reported Personal and Social information sources as being the most likely sources of information, but the difference in the use of

Public information sources may relate back to women being more likely to seek out as much information as possible, while men were satisfied with utilizing their Personal and Social information sources alone.

Previous understanding of information acquisition and processing has utilized the concept of involvement to explain information source preferences (Mortimer & Pressey, 2013). Bienstock and Stafford (2006) highlighted that consumers seek different types of information depending upon their levels of involvement with the product or service. These authors found that highly involved consumers appreciate more detailed marketing materials, while the less involved consumers were attracted through less informative, broadcast media channels, which provided familiarity over depth. It was hypothesized in this study, therefore, that participants who were most involved, both cognitively and affectively, would be most likely to utilize Personal and Social sources of information. This hypothesis was not supported, however, in that no significant differences existed in information source utilization across levels of involvement. In other words, similar relationships were found between all involvement levels and preferred information sources. It is expected that the above explanation regarding the sample characteristics (i.e., experienced golfers), had an impact on the types of information sources utilized. Regardless of the levels of involvement in the league, the duration of time spent in the league may have a more prevalent relationship on the types of information sources used.

Where participants were highly involved, it was expected that they would also be talking, reading, and researching as much information about the activity as possible. Using a variety of sources allows the individuals to engage themselves in the sporting activity. Again, this hypothesis was not supported. Similar to the lack of significance in the types of sources used, the extent of information being utilized did not differ across levels of involvement within this sample. While the sample characteristics may be at play again with this hypothesis, it is also possible that the sources of information surrounding golf leagues are not as widespread as the information surrounding products and services tested in previous information source utilization studies. There may not be access to many public or neutral sources of information regarding the league, but instead, participants rely largely on word-of-mouth, or the golf course's official website regarding league start dates and rates. Internal marketing like signage at the golf course and encouragement of current members to bring friends and other new participants to the course would be two strategic places for golf directors to start to improve word-of-mouth marketing for the golf leagues.

Limitations

To date, no study has examined the information source preferences from this

population, which makes this study largely exploratory. From the examination of the use of new information sources, to the interpretation of preferred information sources, professionals seeking to offer effective marketing communication would be wise to explore the information source preferences within their target market. Furthermore, this sample was comprised largely of experienced golfers, who may therefore search for information surrounding golf league play very differently than would a prospective or new golfer. Results should not be generalized to all golfers, but rather looked at in the context of older adults in Canada. The Information Sources Inventory (Murray, 1991) was also modified, which resulted in the reduction of a couple of items, as well as a less than adequate reliability on the social information sources. Given the differences in information sources relative to each league or other recreational context, the further validation or application of a scale relative to this context would be useful.

Future Research

Future research would be well served to focus on the information source preferences of new golfers who may not have the same social or personal points of references to draw upon prior to deciding to joining a golf league. Similarly, testing the information source preferences among a more varied range of ages would be useful to determine whether there are also differences in the types of information sought and utilized across the lifespan. Once differences in the sources of information have been established, future research could examine the specific messaging that participants respond most strongly to. Other recreational activities could also utilize this research as a framework to explore the sources and extent of information used to decide to join a recreational group. Together, these future research recommendations enable sport practitioners the opportunity to get a better understanding of how and where to present recruitment materials. Future researchers could also consider conducting a qualitative analysis of this subject to get a better understanding of the process that specifically new league members used to make their decision to join the league. This qualitative information may also help to extend the Information Source Preference Inventory and relate the information sources directly to the types of marketing materials used within the respective industry, whether it be golf or otherwise.

As the golf participation landscape shifts within Canada, it is important for researchers to establish best practices for recruiting new and lapsed golfers to the golf course, both to benefit golf clubs financially, but also to promote active leisure opportunities among Canadians. Better understanding the types of information that are most preferred by prospective golf league members is an important first step in this recruitment process.

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Tables

Table 1

Descriptive Statistics for Age, Province, Income, and Marital Status

Age (*n* = 418)	18–49	50 (12.0%)
	50–65	205 (49.0%)
	66 and older	163 (39.0%)
Province (*n* = 426)	Alberta	60 (14.1%)
	British Columbia	161 (37.8%)
	Ontario	15 (3.5%)
	Saskatchewan	190 (44.6%)
Annual Household Income (*n* = 385)	$0–$29,000	13 (3.4%)
	$30,000–$49,000	59 (15.3%)
	$50,000–$74,999	80 (20.8%)
	$75,000–$99,999	78 (20.3%)
	$100,000–$124,999	67 (17.4%)
	$125,000 or higher	88 (22.9%)
Marital Status (*n* = 416)	Single, never married	26 (6.3%)
	Married without children	70 (16.8%)
	Married with children	237 (57.0%)
	Divorced	27 (6.5%)
	Separated	4 (1.0%)
	Widowed	28 (6.7%)
	Living with partner	24 (5.8%)

Table 2

Descriptive Statistics for Golf Experience, League Experience, and Handicap

Years Playing Golf (*n* = 414)	1–2 years	0 (0%)
	3–6 years	19 (4.6%)
	7–10 years	27 (6.5%)
	11 or more years	368 (88.9%)
Years in Golf League (*n* = 419)	1–2 years	37 (8.8%)
	3–6 years	135 (32.2%)
	7–10 years	84 (20.0%)
	11 or more years	163 (38.9%)
Handicap Index (*n* = 418)	Less than 10	88 (21.0%)
	10–18	154 (36.8%)
	19–28	132 (31.5%)
	29 or higher	44 (10.5%)

Table 3

Descriptive Statistics for League Spending

League Night Spending (food, beverage, proshop) (n = 424)	$0–$10	85 (20.0%)
	$11–$25	154 (36.2%)
	$26–$40	69 (16.2%)
	$41–$60	52 (12.2%)
	$61–$80	24 (5.6%)
	$81 or more	40 (9.4%)
League Enrollment Fees (n = 422)	$0–$50	158 (37.1%)
	$51–$100	126 (29.6%)
	$101–$200	72 (16.9%)
	$201–$300	27 (6.3%)
	$301–$400	14 (3.3%)
	$401 or more	25 (5.9%)

Table 4

Pearson's Correlations, Means, Standard Deviations, and Range for All Variables

	Variable	1	2	3	4	5	6
1.	Public	**.827**					
2.	Personal	.336**	**.782**				
3.	Web	.514**	.275**	**.701**			
4.	Social	.460**	.473**	.342**	**.682**		
5.	Affective	-.138**	-.276**	-.142**	-.236**	**.891**	
6.	Cognitive	-.222**	-.290**	-.140**	-.204**	.740**	**.902**
	Mean	3.680	5.293	3.699	4.891	12.301	11.594
	SD	1.383	1.136	1.458	1.309	4.989	5.013
	Range	1–7	1–7	1–7	1–7	5–35	5–35

Note: **Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).
Public: public information sources; Personal: personal information sources; Social: social information sources; Web: web information sources; *SD*: Standard deviation. Numbers across the diagonal are Cronbach's alpha coefficients.

Table 5

Main Effects Test for Differences in Information Source Preferences

Effect	Wilks' Lambda	*F*	Hypothesis *df*	Error *df*	Sig.
Intercept	.088	961.005	4	371	.000
Age	.976	1.123	8	742	.345
Sex	.968	3.114	4	371	.015
Cognitive Involvement	.967	1.548	8	742	.137
Affective Involvement	.997	.1563	8	742	.996

Table 6

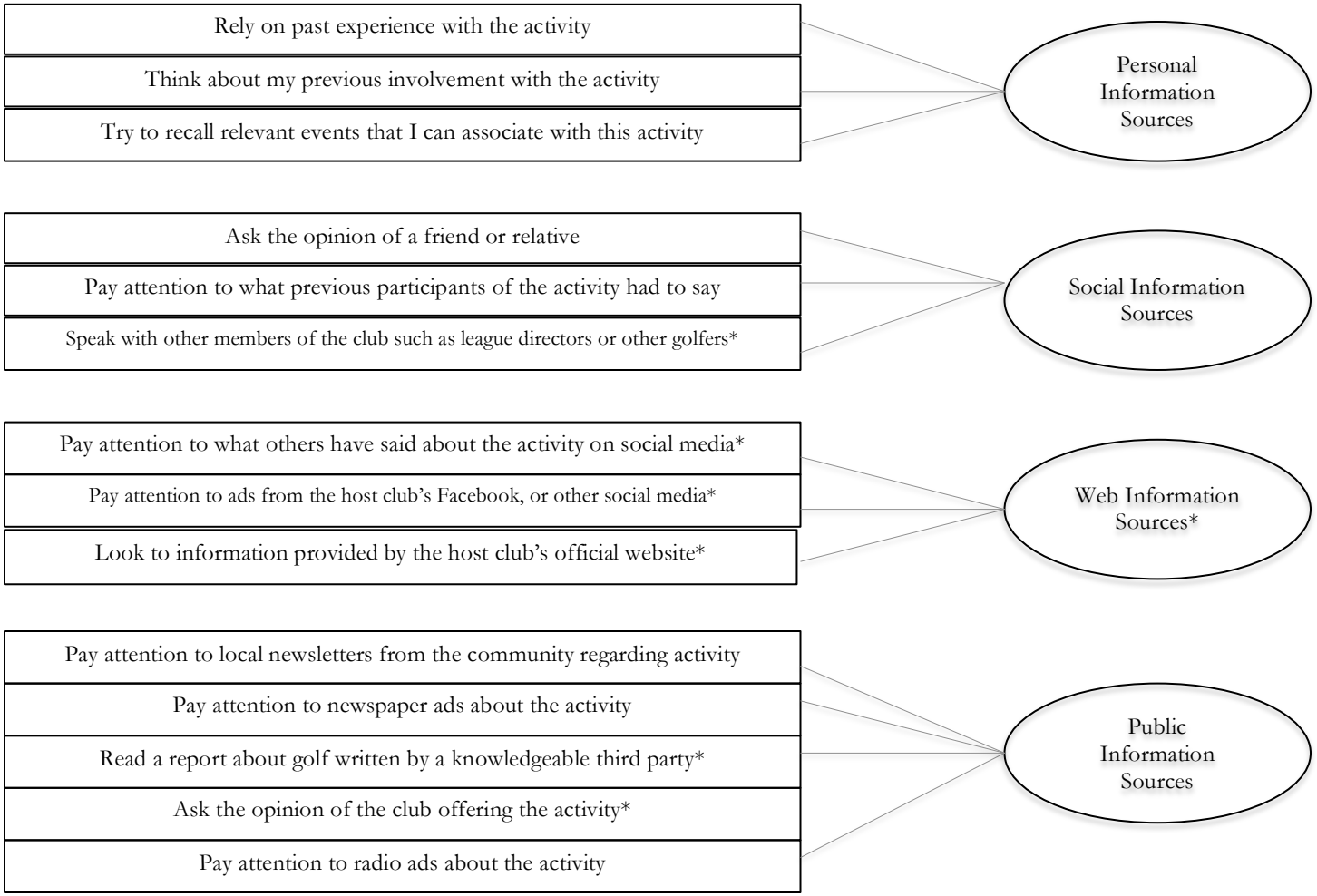
Means for Information Source Preferences Across Sex

	Men (n = 256)		Women (n = 163)	
	Mean	*SD*	Mean	*SD*
Public*	3.51	1.35	3.93	1.39
Personal	5.23	1.11	5.39	1.70
Web Source	3.62	1.33	3.82	1.64
Social	4.87	1.32	4.92	1.28

Note: * denotes significant difference between sexes

Figure 1

Information Sources CFA Model



Note: * denotes a modified/added item from Murray, 1991

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Sport Transitions as Epiphanies

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A basic goal of sport development systems is the transition of athletes from one sport context to another (Green, 2005). Transition research has focused primarily on external transitions in elite athlete's careers at the highest levels of sport (Wylleman & Lavallee, 2004) rather than prioritizing the internal, cognitive development of the athlete at multiple levels. This study examined the sport transition stories of 48 students from an interpretive framework with the goal of understanding the individual's experience of transition. The disruption stage of these stories represents a time of crisis and transition. Denzin (2001) provided a typology for moments of crisis through four types of epiphanies: *major*, *cumulative*, *illuminative*, and *relived*. Analysis resulted in all disruptions being coded into one of the four original epiphany types. However, a large number of stories were categorized as *major* epiphanies. Further inductive coding yielded three sub-types of major epiphanies: *major bodily*, *major life change*, and *major success*. Sport managers will be able to use the results of this study to understand and accommodate the pace and breadth of transition experienced by participants in their sport development systems thus maximizing the retention and advancement to the elite ranks.
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Sport development systems are often conceptualized as groupings of sport organizations at distinct levels (Green, 2005). The popular concept of the sport pyramid serves as a prime example (Eady, 1993; Green, 2005; Shilbury, Sotiriadou, & Green, 2008). Entry at the lowest level is characterized by a wide breadth of local, participation-focused sport organizations. Higher levels of the pyramid are

characterized by narrowing the number of offerings while concurrently raising performance and competitive expectations. While success at any specific level is dependent on factors such as ability, commitment, and motivation, the advancement of an athlete to the highest levels of the system hinges on the successful transition from one level to the next.

Even though system models have allowed sport managers around the world to plan for many athlete transitions (Green & Oakley, 2001), actual successful transition of athletes remains problematic. Many participants that end their sport involvement will do so at these structural transition points (Bowers, Chalip, & Green, 2010). Unlike the external structural transitions that can be anticipated and shaped via the rules and processes of the system, the athlete's internal transitions are less predictable. Intuitively we can understand how any misalignment between internal transition and the systemic processes could complicate movement from through the system. Perhaps continuing difficulties with transition are due to our understandings focusing on the external event rather than beginning with the subjective experience of the participant. Internal transitions are not necessarily made at the same time as the external structural transitions of the sport system. Subjectively important experiences could hasten or delay transitions for athletes.

The purpose of this study is to investigate sport transition through the participant's understanding of that transition. The following section will review the current literature on sport transition, how people use stories to understand and recreate their experiences such as transitions, and how Denzin's (2001) epiphany typology may provide a useful means for sport managers to analyze stories about transition and lead to improvement of our sport development systems. This review leads to the final research question: What epiphanies are present in the stories of sport transition?

Literature Review

Development of an athlete is often seen as the goal of a sport system such as the popular sport pyramid model (Eady, 1993; Green, 2005; Shilbury et al., 2008). This development may come in tandem with movement from one sport context to another. For example, participants may first experience contexts with supportive coaching and opportunities for participants regardless of skill competency at the mass participation level. From this level, the athlete may progress to a competitive sport setting and ultimately to elite sport. These latter contexts favor skill and sport performance over opportunity.

An athlete's participation and advancement through the various contexts of a sport system has been conceived of as an athlete's "career." Research in understanding athlete career transitions in sport has commonly focused on preventing negative transition in order to assist elite

athletes (e.g., Pearson & Petitpas, 1990), either transitioning out of/within sport (cf., (Sinclair & Orlick, 1993; Stambulova, Stephan, & Japhag, 2007; Wylleman, Alfermann, & Lavallee, 2004; Wylleman & Lavallee, 2004) or adjusting to the differences of contextual and structural differences of new competitive levels, often on elite tracks (e.g., Bruner, Munroe-Chandler, & Spink, 2008; Debois, Ledon, Argiolas, & Rosnet, 2012). This work is important as findings have indicated that negative transitions are often associated with detrimental sport participation outcomes from a sport development perspective. Some of these negative (perceived and/or structural) transitions are predictable and normative, such as an end of eligibility or from a choice to retire from competition (Stambulova, 2009; Wylleman & Lavallee, 2004). Other negative transitions are not predictable, such as a significant injury, and are classified as non-normative (Wylleman & Lavallee, 2004). Unexpected transitions are marked with significant difficulty, particularly from the individual perception of the transition itself (Schlossberg, 1981).

While career transition between external contexts is a vital part of athlete development, it forms only part of the development process. The athlete must also cognitively and affectively develop as well. The individual must transition from the perspectives formed in the beginning stages of participation to perspectives useful in continued participation. While the majority of career literature sought to minimize the negative impacts after an external transition via adaptation to those events (cf., Park, Levallee, & Tod, 2013), participant development does not map directly to external transitions. Chambliss (1989) found that athletes in any competitive context could proactively embrace attitudes that lead to success at elite competitive levels requiring high quality behaviors. These results indicate that the internal work of a transition may come after, during, or before the external transition event within a particular system. Therefore, understanding of any transition event must incorporate the subjectively important internal and external experiences of the individual. Participant stories can provide this unique perspective.

Participant Stories

Understanding of the experiences of life has been seen as a primary function of the stories people construct (Ricoeur, 2011). Stories about events such as sport transition provide the teller the opportunity to connect subjectively important elements into a coherent plot. This connecting of selected events can result in stories spanning decades with generations of people involved or encompass mere moments with very few characters. While the content of the story is quite open to the individual, narrative structural theorists such as Toderov (1979) and Labov (1972) have identified structural elements appearing in any complete story. While Labov (1972) deconstructed each story into the six parts of abstract,

orientation, compelling action, resolution, evaluation and coda, Toderov (1979) utilized a less specific structure using the four phases of previous status quo, disruption, action to resolution, and new status quo. The use of narrative analysis has been in a wide range of disciplines including psychology (Bruner, 2002; Polkinghorne, 1995) and education (Clandinin & Connelly, 2004). The analysis of stories as data centers on the actions of the story explained within the story as a whole. The disruption within the story is seen as an outcome of the story elements and is understood more completely because the entire story is kept in mind. This underlying strength of the narrative perspective is similar to the task of the sport development system and the transitions that take place within it.

While entire stories do highlight the personally impactful events and reactions in the sport transitions of participants, using stories to improve our sport systems requires an analysis that focuses on how the transition aligns with internal development. This analysis can proceed by grouping stories based on the structure and/or content of the stories (Polkinghorne, 1995). Denzin's (2001) epiphany typology provides a guide for examining and grouping the individual's internal development via the moment of realization in transitions.

Epiphanies

Epiphanies are moments of crisis in which the individual's current status quo is disrupted (Denzin, 1989; 2001). These moments in a subject's life are seen as turning points after which "a person is never the same" (Denzin, 2001, p. 34). This is very similar to adaptation as described by Schlossberg's (1981) transitions to adaptation theory. Denzin (2001) defines four categories of epiphanies: *the major*, *the cumulative*, *the illuminative*, and *the relived*. *The major* is a single, significant event that immediately touches every part of the individual's life. *The cumulative* is an event that is only one of many similar events but becomes a "last straw" that prompts a change. *The illuminative* is an event that shines light on a previous event that has impacted the status quo but those impacts are manifested in many dissimilar events that follow. Finally, *the relived* is an event that impacts the individual's life but only later is given larger meanings by the individual as he or she continues to relive the event in memory.

Epiphanies have been examined within a highly diverse range of topics and populations. While epiphanies were originally used to interpret the experiences of battered wives (Cho, 1988) and alcoholics (Denzin, 1987), their use has been extended to other topics including changing leisure options (Carpenter, 2003), dancing careers (Wainwright & Turner, 2006), and revealing sexual orientation (Thomas, Ross, & Harris, 2007). In a study that could be argued as exemplary of the most basic level of mass participation sport, Stewart and Smith (2014) examined the experiences of an elderly population with the transition from

sedentary to regular gym workouts. The range of ages and activity levels of these studies indicate that the use of epiphanies has the ability to examine a more diverse sport population than the elite populations of previous psychology based sport career transition research.

The purpose of the following research is to improve sport development systems by discovering the common experiences of sport transition. Specifically, it will attempt to answer this research question: What epiphanies are present in the stories of sport transition?

Method

The authors borrowed from narrative analysis to gather the participants' experiences. Narrative analysis is a methodology that allows the story creators to connect subjectively meaningful events together into a story that logically results in the current status quo (Recoeur, 2011; Riessman, 2008). While not intended to follow strict narrative analysis, borrowing the basic story structure (Todorov, 1977) underlying data collection for narrative studies did allow each respondent to select events that he or she had assigned meaning associated with transition. The basic story structure consists of four stages including (1) *previous status quo*, (2) *disruption*, (3) *action to resolution*, and (4) *current status quo*. Transition events are those experiences that prompt change and development away from the status quo. Given their disruptive nature, transition events align with the narrative concept of a disruption.

Participants

Sport and exercise stories were collected from students in a mandatory wellness class at a mid-sized, private Catholic university in the southwest. Four sections of the class (N=98 students) were given the mandatory assignment of which 82 completed it. In the final week of the course, instructors distributed informed consent documents and asked the class to return the completed document if they would like to include their completed, graded assignment in the study. Ultimately, 48 students consented to include their sport narratives for analysis. This final group of students included 32 males, 26 females and had an average age of 19. The group's sport participation experience ranged from NCAA Division I athletics to brief, organized youth sport experience.

This final group is representative of the school and the city in which it is located. As a Hispanic Serving Institution that seeks to provide access opportunities to the residents of the county and the seven county that border it, the students closely mirror the population of the city and its surrounding area. The group is predominantly Hispanic with several first generation college students. The gender ratio of the group (male to female ratio of 1.23) does not match the ratios seen in the college (male to female ratio of 0.47) or the city (male to female ratio of 0.97).

Instrument

The narrative assignment consisted of each student completing a four-part worksheet about a significant transition leading to his or her current sport or exercise status quo. The worksheet followed the aforementioned basic narrative construction (Todorov, 1977) of (1) *previous status quo*, (2) *disruption*, (3) *action to resolution*, and (4) *current status quo* (see appendix A for complete instructions). After completing these four stages, the worksheet prompted the student to further elaborate first on the *disruption* and secondly on the *action to resolution*. Students completed the worksheet assignment and submitted the typed, electronic documents to the university's Blackboard course management system.

Analysis

All participant documents were downloaded from the Blackboard course management system and inspected for completion. Secondly, the researchers removed identifying information and assigned pseudonyms to protect the identity of the respondents. Reliability was maintained through independent coding by two of the authors with discussions between multiple iterations to find agreement over differences in coding (Edwards & Skinner, 2009).

The initial round of analysis examined the disruption stage as a whole using the pre-determined epiphany types: *the major*, *the cumulative*, *the illuminative*, and *the relived* (Denzin, 2001). Two of the authors coded the entire set of stories. Choosing the epiphany category for each story was based on the arrangement of contextual and perceptual change from the previous status quo to the new status quo. Recall that epiphanies are distinguished from one another by the arrangement of the perception of change and the contextual change of the individual. These two factors may both change quickly (major), the context may change prior to perceptual change (illuminative), the perception may change prior to the context (cumulative), or the perceptual change may take place long after a change (relived).

The authors also allowed for coding a story as "other" which could account for stories such as those without change across its arc or stories with a perceptual change long before a contextual change (the opposite of relived). However, after the first iteration of coding, neither author had coded any of the sample of stories as "other". Perhaps this was due to the construction of the assignment as a four-part narrative detailing a change from some previous status quo to a different, current status quo. This structure necessitates both elements, which distinguish the pre-defined set of epiphany types. A less formal story construction prompt may have resulted in generating stories coded as "other".

Over half of the subjects' narratives were coded as major epiphany. Although all of these stories did fit the criteria of a major epiphany, there seemed to be a few noticeable similarities among the impetuses

of the sudden change. The authors conducted an additional round of inductive analysis on the narratives within the major epiphany group. This additional coding consisted of first using line-by-line coding and then assigning categories that became the subtypes of the major epiphany. Where epiphany types are based on the contextual and perceptual change, subtypes were coded based on the events that drove the transition. Three subtypes of the major type were found: major bodily, major life change, and major success. Additional coding was not conducted on the other three epiphany types in part due to the lower number of stories in these groups. There did not seem to be the differences in transition drivers as was apparent in the larger group of major epiphanies. The following section details the sport elements of the stories within each epiphany type and subtype.

Results

Major Bodily

The stories within the *major bodily* subtype shared a disruption of significant injury, illness, or environmental impact. Recall the *major* epiphany is one that "shatters a person's life, making it never the same again" (Denzin, 2001, p. 37). These epiphanies have immediate, life changing impact that cannot be ignored. This life changing impact is evident in Sandy's story of an injury as a High School cheerleader when she recounted, "After tearing my ACL, everything changed... not only did my injury disrupt my dancing, it disrupted my entire ability to do anything... For a while, I could not separate myself from my injury." Soccer players with broken ankles, baseball pitchers with torn rotator muscles, and runners with torn patellar tendons are examples of injuries that brought a swift end to participation in sport at the competitive level they had attained. Although they may recover most of their abilities, the injured body did not support the significant work required for competitive sport participation. Mike summarized the permanent impact of these injuries, "The doctor told me this injury is like a death sentence for pitchers. After I had heard this I knew my playing days were over. It was a sad, sad day for me."

Mental and emotional impacts played a large part in these narratives as well. Mary's story deomonstated how self-perception can dominate participation regardless of the body's ability to recover from an injury through her reaction to a knee dislocation. She said, "I just remember thinking how much the pain took over my whole body when I fell to the ground. It traumatized me. I told myself I shouldn't do it anymore. I'd rather be safe than sorry." Participation was ended immediately for Raul not because he developed asthma but because of the depression that followed. He described the quick change, "But when I got asthma I went into a deep depression… I quit swimming completely." The emotional cost was apparent as well, "my heart was broken," (Sally), "my emotions in the hospital were everywhere from being

depressed to sad…" (Jesse), "as a result I lost my nirvana." (Wendy). The life altering impact of these epiphanies came as a result of physical failure with mental and emotional strain.

Major Life Change

The *major life change* subtype contained stories of significant impact due to social and contextual changes in the respondent's life. As with all *major* epiphanies the impacts of these life changes are immediate and undeniable. Structurally, graduation from high school and entrance into college life impacted several narratives in this subtype. Although the end of high school sport is completely predictable the impact was often greater than anticipated, as Zaina indicated:

> Finding my new normal hasn't been very difficult because I didn't really have a choice in the manner. I was no longer in high school so playing softball there wasn't an option anymore. I considered being a walk-on for college but there were many complications.

Along with the shift in context came a change in priorities. Beth's comment succinctly captures the common sentiment from these narratives. She said, "in college - sports are different, priorities are different." Where athletes did not continue with varsity athletics in college, stories feature a seismic shift from sport to grades.

A family move also proved to be a *major life change* for these respondents. Several stories indicated that moving from one location to another caused a sudden shift in sport participation as well. A range of complications resulted from a change in location including a loss of friends, "When I moved...I was forced to find new friends... I lost my passion for sports because my friends did not like sports," (Darlene), change in competitive focus, "I also had to start at a new club team here and realized that club soccer was a lot more competitive [here]" (Laura), and cultural differences as Carlos points out in this comment about how U.S. soccer is different than in his childhood home in Mexico:

> Here most of the time [soccer] has [a] schedule and programs to follow. When I was kid we didn't have any day of practice or schedule not even soccer field close to us. We play at [sic.] the street and those things are hard to explain to someone.

Amanda shared how the move can impact many several aspects of life, altering it permanently, "I had a really hard time adjusting to life here. School was a lot harder and softball just felt different."

Finally, a *major life change* could come about through the actions of a single person in the storyteller's life. Within the sport setting, a loss to a competitor could spur change as it did for Rick. He described the event, "I ran the 100 yard dash and got dead last with a time slower than the JV 100 yard dash runners. My time and placing discouraged me so much that I decided to quit track." Change could also begin with the comments of a demanding coach as

Lane described, "My coach said he wasn't pleased with my performance… that made me feel like I let down the team." Outside of sport the interactions impacting participation could be quite significant. Gwen succinctly stated why she ended her participation in sport after being molested, "Soccer no longer had the same meaning that it once did." She continued with:

> All I wanted to do was quit, isolate myself from every male individual, and eat as much as possible so no male would look at me or make any inappropriate comment about my figure. I didn't care about school, my appearance, my eating habits or my love for this sport.

Stories of life transitions were both positive and negative but for each story, the individual understood that the incident was immediately life changing, sometimes for more than just sport participation.

Major Success

Stories in the *major success* subtype feature moments of the sport equivalent of "love at first sight." Disruption in these stories gave the respondent new goals to chase through a new sport to love. Ron's comments typified how these stories highlighted how different their lives were before taking up sport. He said "I was antisocial and did not have many people that I could call friends. I also led a sedentary lifestyle and was not the most motivated person." From these beginnings, each story shared a sudden disruption through experiencing sport. Trevor's experience showed how the new love can impact more than just sport participation. He stated:

> Always in trouble and in and out of the principal's office my mother finally let me play football my sixth grade year of school. I discovered I had a gift. My attitude for school immediately changed. Being good in football along with other sports brought me popularity amongst my peers but also with other staff members and authority figures at my school. With that my attitude changed and I was actually *happy* [emphasis in original].

The impact of pursuing new goals in sport echoed across their lives.

A significant change in love of sport also came when casual participants had a contextual experience that changed their lives. Nancy came from a family of world-class athletes but did not hold sport as central to her own life until her first day at the national training center. She described that moment, "[As] soon as I stepped into the buildings, I was in awe. Olympic hopefuls, even Olympians surrounded me as I enter the training facilities. I competed in my first [event] and I was hooked." Vince had a similar experience first as an unaffected middle school runner. He said, "However, when I got into high school, that's when sports really changed my life." The shock of a new context to previously unimportant sport participation altered the centrality of sport in their lives.

All three of the *major* epiphany subtypes feature immediate impact radiating beyond sport participation. Whether it comes as a physical injury, a change in neighborhood, or a new passion to pursue, the impact was undeniable and change was unavoidable. Unlike the major epiphany, the following types of *cumulative*, *illuminative*, and *relived* did not carry the same immediate impact. Realization of their impact built over time, sometimes prior to transitions and sometimes as a result of it.

Cumulative

The stories within the *cumulative* epiphany type share a history of growing call for action. Recall that in the *cumulative* epiphany the individual realizes a change is needed after several small events. While the individual may identify one "last straw" event, it is not significantly different from all of the previous events leading up to it. Manuel's experience serves as an example of just how unremarkable this process can be. He described quitting organized soccer after, "the coach put me in only two games the whole season." Unlike major epiphanies with their immediate impact, the stories with the *cumulative* epiphany type are seemingly undramatic. However, parental pressure to play basketball at a high level show just how dramatic slow building pressure can be. Brad related his story, "I truly hated what my life had become, it was not anything I planned, I felt as though everything that I was doing was for my dad and his own dreams that never developed during his life." Pressure to change was built event by event for these respondents until the moment their perspective changed and with it their sport participation changed as well.

Illuminative

Stories fitting the *illuminative* epiphany type build a case that the situation is now different than during the beginning status quo (Denzin, 2001). Where the *cumulative* epiphany is about realizing that things need to change, the *illuminative* epiphany is about realizing things have already changed. Will's perception as a star football player didn't change as he became bigger and faster than the other players or even when he became a starter on the varsity team. Although he made some note of these changes, his self-perception didn't change until one final indicator as indicated by this comment:

> When my coach told me some colleges were in contact with him about me, that's when I knew football was more than a thing to do in high school. I quit the other sports I played and started to lift a lot more and run and practice my skill.

In the extreme, the slow process of an *illuminative* epiphany can result in significant health troubles. Sara's workouts had increased steadily while eating had fallen to a single meal a day. She said, "As I noticeably began to lose weight my parents began to worry and ask questions. I avoided their questions as long as I could." Even after her family got her help the *illuminative*

realization of her situation wasn't immediate as indicated by her comment, "I became more depressed before I began to be happy again." Bart's story of unsustainable level of training echoes Sara's but without the need for family intervention. He summarized with, "My lack of nutritional discipline caused me to have early stages of anemia… [so] I decided to retire from competitive swimming at the age of nineteen." Changes in health, family support, and competitive abilities were each recognized by the individual but did not by itself prompt a change in perspective. Each of these athletes played catch-up with the changes around them.

Relived

The stories in the *relived* type look back on an event with developing importance. The *relived* epiphany is one in which the individual builds up a past event assigning it greater meaning within his or her life. By continuing to focus on this event, the narrator links more outcomes to this single moment. The stories in this type also show how reinterpretation of that significant event is part of its developing importance. The original meaning assigned to the event could change as indicated by Nate in this comment, "One thing I knew I wanted was to be farther away from my parents so they couldn't dictate how I lived." After accomplishing this separation though, Nate realized that it was much different liberation than he had originally thought. He continued, "It took me away from using my dad as a crutch [which] has to be taken away from you for you to realize its worth." Regret is part of the transformation for Teresa's decision not to take a tennis scholarship away from her hometown. She tells what it was like initially, "I would have to leave my boyfriend, which I was in love with at the time. I knew if I were to leave, our relationship was bound to fail." Ultimately, Teresa's narrative is about forgiving herself but not before dropping sports, gaining weight, and mounting stress. She related how things had changed, "I had broken up with my boyfriend at the time. I had turned down the tennis scholarship, because I was in love with him. I started regretting my decision." She begins to load her scholarship decision with greater and greater significance to her current troubles. The disruptive power of *relived* type epiphanies is unlike the mostly static recollection of events in the other epiphany types. It derives its disruptive power from the transformation and enlarging importance to following events, both positive and negative.

Discussion

The purpose of this study was to investigate sport transition through the participant's understanding of that tradition. After a review of the literature the following research question remained: What epiphanies are present in the stories of sport transition? Thus, in advancing this line of research we hope to illuminate an understanding on transitional events and

their potential impacts on both elite and non-elite athletes' sport development.

Implications for Theory

Denzin's (2001) typology does provide a minimal structure to create similar groups of these sport transition events that disrupted the previous status quo of the respondents. Each of the student narrative disruptions was coded for one of the four types of epiphanies: *major*, *cumulative*, *illuminative*, or *relived*. However, for this data set of sport stories, the *major* epiphany type, as originally defined, captured a significant portion of the disruptions. Further sub-categorization was necessary to adequately divide the range of disruptions within the *major* epiphany type. This categorization resulted in the subtypes of *major bodily*, *major life change*, and *major success*. The utility of epiphanies in interpretive interactionism is its power to reveal an individual's understandings. Denzin (2001) further described the impact of epiphanies, "In these existentially problematic moments, human character is revealed and human lives are shaped, sometimes irrevocably" (p. 145). However, the subtypes of the *major* epiphany type highlight how discussing both "the structure of these moments and the experiences that flow from them is necessary" (Denzin, 2001, p. 145). The original *major* type is defined almost exclusively through its immediate and extensive impact. The experiences to follow cannot be fully implied through this general level of definition.

The results of this study indicate that theory based on sport epiphany would need to include the driver of the transition. The sample of sport stories classified as *major* epiphanies contained three elements that were so significantly present and distinctly previewed the experiences to follow that they challenge a typology based solely on timing and breadth of impact to adequately capture these "existentially problematic moments" (Denzin, 2001, p. 145). The fragility of the body (*major bodily*), the tenuousness of social context (*major life change*), and the joy of success (*major success*) each resonated through the major group and predicted a distinct set of following experiences as to become a requisite, close-second level of structure to the sport epiphany. This theory must, therefore, be developed through the other three epiphanies to find out what driving events shape and define the sport sub-types of the illuminative, cumulative, and relived epiphanies.

Implications for Practice

The value to sport development managers in considering any group of epiphanies separately is to focus on the timing and breadth of impact of an event and to examine the nature of these events in relation to structure and policy. For example, stories in the *major* epiphany are dominated by the suddenness of transition. While the subtype of *major success* provided the drive to progress to higher levels of sport competition, the other two subtypes

often resulted in ending sport participation. Transition events in these two *major* epiphany subtypes often highlight the feeling of quickly moving from in sport to being on the outside. These respondents knew almost immediately that they would never participate in the same way, if ever again. Perhaps the "up or out" nature of the typical sport system (Green, 2005) results in such a large number of events that have an immediate, life altering impact.

Major epiphanies highlight the tenuousness of sport participation and how quickly participation can be stripped from an athlete. Reducing this tenuousness is a possible goal considering sport participation levels have been on the decline (Bowers, et al., 2010). The sport pyramid analogy does allude to an interpretation that as you move up, there are less participants (i.e., up and out). Successfully transitioning back into a lower level of competition seems to be made more problematic based on this assertion. The research may help identify that a *major* epiphany in someone's sport participation pathway contributes toward this problem.

Several respondents spoke about not being able to participate at the same level as they currently were before the sudden transition typical of the major epiphany. The unspoken statement is that moving down one level of participation more fitting their new abilities is not even an option. For example, Mike's injury was a "death sentence for pitchers". He might be able to throw but never at the level he had attained prior to the injury. Movement to a participatory league or changing his role on the team were never seen as an options. Sport managers hoping to retain players like Mike in the sport would need to proactively build options and support for players with injuries such as his. Having a few examples of players that had successfully transitioned within the sport rather than out of it would provide viable options currently unseen by these participants. Focusing on managing a *major* epiphany could help sport administrators design better programs to account for this phenomenon.

The practical value to sport development system design of the other three types of epiphanies, *cumulative*, *illuminative*, and *relived* epiphanies, comes from recognizing a transition event over time. Stemming from the unsynchronized changes in perceptual progression and contextual progression experienced by sport participants, stories of these three epiphany types highlight the passage of time in relation to recognizing the impacts of transition events. Recall that the *cumulative* epiphanies feature a continuing situation, but the realization that it has become untenable and must change is manifest later in a person's life. The *illuminative* epiphany features a situation that has already changed yet the individual has failed to realize it until later. The *relived* epiphany also features a look back at a past situational change but concentrates on a single event rather than several as in the *illuminative* epiphany (Denzin, 2001). Perhaps it is the

socialization into each context of sport that creates a mentally durable view of the sport setting resistant to change (MacPhail & Kirk, 2006). Eventually the status quo degraded in each case, sometimes through external transition, ultimately creating the problematic moment of epiphany. One such example is Teresa's relived epiphany, which comes as she connects more and more of her current situation to the decision not to accept a scholarship in favor of young love. It is only as the implications of this decision play out does she begin to attribute much gravity to the transition. Love blinded her but the speed of its removal does not match the slow realizations on her part. Brad's cumulative epiphany comes as he slowly realizes that his basketball participation was solely to satisfy his father. Both of these examples demonstrate the extended period of time in which the participant lives in a mismatched and unsatisfying scenario. Only through the epiphany does either make the moves – internally for Teresa and contextually for Brad – to relieve this tension and develop more rewarding sport participation.

Sport managers could provide participants such as Teresa and Brad opportunities to reflect on their sport decisions and participation as part of their development programs. The difficulty for people experiencing illuminative, cumulative, or relived epiphanies was the period where they did not recognize the disconnect between expectations of the sport situation and their realized experience of it. Helping participants achieve a greater understanding of the transition experience could help the individual complete his or her epiphany, freeing them to move into the action to resolution stage on the way to a new status quo. This process is similar to the adaptation stage of Schlossberg's (1981) model.

Utilizing the epiphany perspective would not necessarily require the creation of entirely new programs. Workshops already exist to assist in adult development and transition (Anderson, Goodman, & Schlossberg, 2012). For example, several NCAA Division I athletics programs provide developmental support for their athletes with outcome goals tailored to their experience level (e.g. freshmen learn organizational culture and veterans prepare for transition at the end of eligibility). An assessment of the athlete's alignment between perception and situation could easily be added to the participant profile workshop step (Loesch, 1985) to reveal any slow progressing epiphanies and direct support activities helping the student-athlete resolve misalignments undermining important transitions.

Future research should address the limitations of this study while exploring its implications. This study was conducted at a mid-sized catholic university. Although this university does participate in NCAA Division I sports, the overall population of the school may not be diverse enough to adequately represent stories of sport participation. Further, the narrow range of

ages included in the sample may also have constrained the potential experiences of transition and development in sport. Future research looking into the implications of defining transitions not externally, but through the timing and extent of impact, would also need to utilize a more diverse sample as well.

Conclusions

This study began with the notion that while an athletic career perspective on transition events provides some valuable directions for helping elite athletes negotiate problematic transitions, solely relying on this perspective provides an incomplete view of development by focusing exclusively on personal adaptation to external transitions. This study examined the transition stories of non-elite sport participants using Denzin's (2001) epiphany typology. We found that grouping the transitions based on epiphanies improved our understanding of these critical events. This understanding comes by illuminating the structure of time and impact in transition events. Given the nature of sport, all participants will experience a transition during their sport experience, some for the positive and others potentially ending sport in his or her life. In fact, these transitions are essential to the development of the participants in our sport systems.

Understanding sport transitions through the lens of epiphanies may allow sport managers to design sport systems that facilitate the primary goals of retention and advancement of athletes throughout their sport development system. Negative transitions often result in ending sport participation. Systems can utilize this new understanding to capture and reintegrate participants experiencing the "up or out" and reintegrate them into sport participation at a more appropriate level. Support may also be designed for those participants experiencing the slower transitions, helping them to complete the transition and continue sport participation without the draining impacts of disruptive events. Transition within sport systems is inevitable but sport managers can account for the timing and impact of these transitions from the participant's perspective may reverse the decline in sport participation around the globe.

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Appendix

Appendix A: Narrative Worksheet Instructions

Instructions to students
Narratives are ways that people understand their experiences in the world. They tell about the changes in our lives leading to where we are today. This reflective writing aims to improve your ability to consciously recognize your narrative about one important topic in your life.

The topics you may choose from are sport or exercise.

- Sport is one of the major social institutions in the modern world. We may engage with it as participants, fans, bystanders, or avoiders. Even if sport is very disliked it does occupy some place in your life.
- Exercise is activity of sufficient intensity to effect change in the body. Just as with sport, exercise will occupy some place in your life such as an active participant, a wishful goal chaser, or even hater of the "gym scene".

Narratives are about change. We are all born neither hating nor liking, neither participating nor avoiding each of these three topics. Along the way each has come to occupy the place in your life that it has today. The place of each may have changed several times during your life; changing subjects, growing or shrinking in importance. The goal is to reflect on how it has come to occupy this place.

Use the attached narrative worksheets to help you construct a narrative about your topic.

Narrative worksheet:

- One way to construct a narrative is to work through the typical four parts of a story; old normal, disruption, action, and new normal. Use the attached narrative worksheet beginning with Part 1 old normal and progress through each part asking yourself "What came next?"

- Another way to construct a narrative is to begin from today and think backward asking yourself "What led to this?", "What events took place before this one to lead to this?" If you choose to work backward then begin with Part 4 New Normal then go to Part 3 etc.

Reflective Writing #1 focuses on the disruption. After writing short answers to each of the narrative parts (old normal, disruption, action, new normal) you will return to

the disruption and elaborate on this part of your narrative. Provide greater details on the disruption that ended the previous status quo.

Reflective Writing #2 focuses on the action. Next you will return to the action part and elaborate on this part of the narrative. Provide greater details on the actions that you took to find the new way of doing things that became your new normal.

Worksheet for Students

Your Name:
Topic – Choose one of the two topics for your narrative: sport or exercise.
_____

Part 1 Old Normal – Describe the place in your life that sport or exercise had before the place it has today. (It may be more liked or disliked, more or less intense, or connected to different people. The one thing we know is that it is different than today.)

Type your Part 1 here:

Part 2 Disruption – Describe what happened to cause a change in the place of the topic in your life. (Sometimes this is a single, significant event that shatters the old normal. Other times it may be a series of small failures of the old normal that cause you to just "give it up" one day and begin looking for a new way.)

Type your Part 2 here:

Part 3 Action – Describe some of the things that happened while sport or exercise was taking its new place in your life. (Perhaps you tried several new arrangements or had one new thing that took significant time and energy to accomplish.)

Type your Part 3 here:

Part 4 New Normal – Describe the place of sport or exercise in your life today. (Is it very important to you? Do you make decisions for your life based on this sport or exercise? Do you like it or hate it? Is it connected to important people in your life?)

Type your Part 4 here:

Elaboration Disruption – Provide more details on what happened to break the old normal. Think of explaining it to a foreigner who may not understand the unspoken meaning of things like someone that grew up in San Antonio would understand them. Help the reader understand why this was disruptive to the old normal. You may include more about your emotions, important people involved, or even other events happening at the same time.

Type your disruption elaboration here:

Elaboration Action – Provide more details on what happened while you were finding and establishing your new normal. Think of explaining it to a foreigner who may not understand the unspoken meaning of things like someone that grew up in San Antonio would understand them. Help the reader understand what you were trying to do at the time. You may include more about your feelings, other people involved, or any number of failed attempts along the way.

Type your action elaboration here:

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Do Psychosocial Services Make the Starting Lineup? Providing Services to Student-Athletes

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Participation in college athletics comes with inherent risks. Many of these risks relate to the psychosocial well-being of athletes. This study examined the availability of services that treat psychosocial needs. A web-based survey was used to gather information from both athletic directors (N = 132) and athletes (N = 349). The researcher used descriptive and multivariate tests to analyze the data and found both athletic directors and athletes found psychosocial services to be less available than academic and athletic services. Additionally, NCAA division level impacted the degree of service availability. More must be done to ensure the psychosocial well-being of college athletes. This includes exploring ideas for having services more readily available.

At the end of the 2014 fiscal year, the National Collegiate Athletic Association (NCAA) had an $80.5 million surplus from the $989 million it pulled in through various means (USA Today, 2014). For the NCAA, March Madness is its most profitable enterprise bringing in roughly $900 million in revenue (Berr, 2015). Revenue earned through March Madness and other events goes straight back to athletic programs that equip student-athletes to exceed on the field, in the classroom, and in life (NCAA, 2016b). The question becomes whether or not these NCAA programs are truly supporting the academic, athletic, and psychosocial well-being of student-athletes – the student-athletes responsible for generating NCAA revenues.

In order to support student-athlete success both in and away from competition, programs must be available to assist athletes with ongoing needs (Gill, 2008). This research explored the opinions of student-

athletes and athletic directors as it relates to the availability of academic, athletic and psychosocial support services. This study looked for overall opinions, but also sought to examine whether or not there is a difference in available support services across NCAA Division levels (I, II, and III). In 2014, the NCAA allocated roughly $547 million to Division I conferences and schools, which is twice that allocated to Division II and III programs (USA Today, 2014). Therefore, Division I programs might have the resources to make services more readily available.

Another primary objective of this study is to explore the availability of services that address psychosocial risks. This research refers to a psychosocial risk as any challenge to the psychological or social development of a student-athlete that is a result of his or her participation in an athletic environment (Anderson, Petrie, & Neumann, 2011; Beauchemin, 2014; Watson & Kissinger, 2007). This is of importance as the NCAA named mental health as the number one health concern facing student-athletes (NCAA, 2013b). Mental health risks can include depression, suicide, substance abuse, alcohol abuse, and disordered eating, amongst others (NCAA, 2013b). For example, research shows that up to 33% of student-athletes experience symptoms of depression (Cox, 2015; Wolanin, Hong, Marks, Panchoo, & Gross, 2015). With such a high prevalence rate, available services are needed to promote student-athlete well-being and resilience.

Currently, very little is known about service availability, especially as it relates to psychosocial services. In a recent study, 25.7% of student-athletes did not know how or where to access mental health treatment at their university (Cox, 2015). A report from the NCAA (2015), found that most athletic departments do not employ full-time or even part-time practitioners specializing in mental health. Instead, these athletic departments depend on campus resources such as counseling centers (NCAA, 2015).

By understanding current perceptions of service availability, this research can shed light on whether or not the NCAA and athletic departments are doing what is necessary to help student-athletes succeed and properly using the revenues gained by student-athletes. Making services available is one of the first steps towards ensuring student-athlete safety and well-being. The information gleaned from this study could help the NCAA and athletic programs recognize existing strengths and address current limitations for meeting the unique needs of student-athletes. This research can also provide practitioners with insight about the perceptions of student-athletes and encourage them to think critically on how they can make their presence more felt. Lastly, hearing directly from student-athletes will allow their voice to be heard and allow researchers to advocate for the advancement of their well-being.

Literature Review

The Current Approach to Student-Athlete Support Services

The NCAA (2016b) does have recommendations for promoting the success of a student-athlete on the field, in the classroom, and in life. The NCAA Sport Science Institute promotes these recommendations. These recommendations call for athletic departments across the country to provide student-athletes access to athletic training, sports medicine, academic advisors, tutoring services/study tables, and career development.

The NCAA (2013b) also has recommendations for assessing the mental health concerns of student-athletes (e.g., depression, suicide, alcohol abuse, substance abuse, and disordered eating, amongst others). These recommendations stem from the work of the NCAA Mental Health Task Force, a task force comprised of mental health professionals across the country. Task Force recommendations include referring student-athletes for psychosocial evaluation and care, addressing psychosocial risks during pre-participation examinations, establishing standards for approaching student-athletes with a psychosocial risk, scheduling routine evaluations to assess a student-athlete's total well-being, establishing standards for submitting outside referrals for severe cases, and educating student-athletes about potential psychosocial risks, amongst other recommendations (NCAA, 2013a).

To implement current recommendations, the NCAA allows each school's athletic department to determine how best to meet the academic, athletic, and psychosocial needs of their student-athletes. In other words, there are 1,092 NCAA affiliated colleges and universities providing support services in potentially different ways. This research will give a glimpse into the equality of this approach and whether or not athletic departments are ensuring that academic, athletic, and psychosocial support services are all readily available to student-athletes. The researcher is hypothesizing that academic and athletic services will be more readily available, despite the fact that mental health concerns are the number one problem facing student-athletes. The primary reason for this hypothesis is the ongoing stigma associated with mental health. Student-athletes, coaches, and staff tend to minimize mental disorders as it is counter-productive to traditional sport culture that tells us athletes are supposed to be mentally tough (Baumann, 2016; Carr & Davidson, 2015; Corrigan, Druss, & Perlick, 2014). Believing in traditional sport culture is dangerous as reality tells us that psychosocial risks are fast-growing in the world of college athletics.

Psychosocial Risks of Student-Athletes

Research on the psychosocial risks of student-athletes often considers multiple confounding variables. Variables include, but are not limited to, gender, ethnicity/race, competition level (Division I,

II, and III), type of sport (team or individual), profile of sport (high profile or low profile), the college or university's religious affiliation, and affiliation as a historically black college or university (HBCU). The following sections explore how and why many of these variables impact student-athletes in relation to depression, suicide, alcohol use, illicit substance use, disordered eating, and general well-being. These sections also highlight the need for psychosocial services.

Depression and suicide. An estimated 33% (or as many as 148,500) of the 450,000 student-athletes self-identify as being depressed (Cox, 2015). Wolanin and colleagues (2016) found that 23% of these student-athletes meet clinically relevant levels of depressive symptoms. Overall, female student-athletes are almost two times more likely to experience sport-related depression than their male counterparts (Wolanin et al., 2015).

Miller and Hoffman (2009) found that approximately 5% of student-athletes contemplate suicide. Suicide is the fourth leading cause of death in student-athletes (Rao & Hong, 2015). Some feel student-athletes are more likely to suffer from depression and attempt suicide because they cannot handle athletic pressure, believe their identity is only based on their athletic association, do not believe a helping professional would understand their unique situations, are struggling academically, and/or feel isolated from the overall campus population (DeFreese & Smith, 2013; Miller & Hoffman, 2009). Student-athletes suffering from depressive symptoms and suicidal ideation are also more likely to use alcohol and illicit substances as a coping mechanism (dual diagnosis) (Gill, 2008).

Little research is available on the association between a student-athlete's ethnicity/race and mental health risks. There is also little research available about the mental health risks faced by student-athletes at a HBCU versus other colleges and universities. Yet, what is available points directly to the isolation and discrimination that male, Black student-athletes face (Agyemang, Singer, & DeLorme, 2010). In particular, male, Black student-athletes are more likely than male, White student-athletes to be viewed only as athletes and not as students, are more likely to be isolated from other members of the campus community, and are more likely to face academic discrimination by faculty members (Steinfeldt, Reed, & Steinfeldt, 2010). For male, Black student-athletes, negotiating their racial and athletic identities is difficult because both roles are linked together in the minds of others, which certainly poses risks to a student-athlete's mental well-being (Hudson-Banks & Kohn-Woods, 2007; Steinfeldt et al., 2010). Not to mention, for many male, Black student-athletes, they see athletics as their vehicle to self-realization and socioeconomic advancement (Edwards, 2000). Unfortunately, for most of these student-athletes, their dreams of becoming the next

professional superstar will not come true. This is detrimental to these student-athletes as many of them dedicated their entire college career to athletics, which meant they spent little time on their career and occupational development (Edwards, 2000).

Alcohol use. A recent report from the NCAA (2015), showed that 80.5% of student-athletes consumed alcohol each year. Over the past ten years, researchers have consistently shown that student-athletes are prone to episodes of binge drinking, with 40% to 52% of athletes reporting they have consumed more than five drinks in a night (Druckman, Gilli, Klar, & Robison, 2015; Ford, 2007a; Yusko, Buckman, White, & Pandina., 2008). Student-athletes participating in a team sport (e.g., basketball) versus an individual sport (e.g., wrestling) were more likely to engage in high risk alcohol consumption (Brenner & Swanik, 2007). Student-athletes competing at the Division III level (83%) were more likely to participate in risky behaviors involving the usage of alcohol than student-athletes at the Division II (79%) or Division I (78%) level (NCAA, 2013c). Male (80%) and female (82%) student-athletes use alcohol at nearly an identical rate. However, male student-athletes are more likely to engage in episodes of binge drinking (NCAA, 2013c). White student-athletes also reported higher levels of alcohol consumption than athletes identifying a different race (Doumas & Midgett, 2015).

The high prevalence rate of alcohol abuse among student-athletes is attributed to many factors. Studies indicate that student-athletes often drink as a way to socialize and impress their teammates (Wahesh, Milroy, Lewis, Orsini, & Wyrick, 2013; Zamboanga, Rodriguez, & Horton, 2008). Student-athletes also use alcohol as a sport-related coping mechanism (e.g., to overcome athletic pressure) or as a sport-related positive reinforcement mechanism (e.g., as a tool to enhance athletic performance) (Wahesh et al., 2013). Other reasons for alcohol consumption among student-athletes include the use of alcohol as a tool to overcome academic stress and a student-athlete's belief that alcohol consumption will help him or her fit in with the overall campus population (Ford, 2007a).

Illicit substance abuse. In addition to concerns about alcohol consumption, student-athletes are also at risk of abusing illicit substances. The NCAA (2013) found that 22% of student-athletes use marijuana. Male student-athletes are at a greater risk of marijuana use (25%) than female student-athletes (17%) (NCAA, 2013). Division III student-athletes are more likely to use marijuana (29%) as compared to Division II (20%) and Division I (16%) student-athletes (NCAA, 2013).

Yusko and colleagues (2008) found that student-athletes also abuse banned performance enhancers at a rate of 6%. This is similar to results reported by the NCAA (2013), which was 4.6%. As was the case

with marijuana use, male student-athletes and student-athletes competing at the Division III level were more likely to disclose use (NCAA, 2013). Male student-athletes who use performance enhancing drugs are also more likely to abuse alcohol (Buckman, Farris, & Yusko, 2013; Buckman, Yusko, Farris, White, & Pandina, 2011; Buckman, Yusko, White, & Pandina, 2009).

Ford (2007b) found that student-athletes participating in team sports were more likely to use illicit substances than student-athletes competing in individual sports. Student-athletes with strong religious affiliations were less likely to use substances as spirituality was a factor in the hesitation against doping behavior (Zenic, Stipic, & Sekulic, 2013).

Researchers attribute substance use among student-athletes to many factors. Student-athletes use illicit substances for some of the following reasons (1) to improve athletic performance, (2) to treat sport-related injuries, (3) for social and personal reasons, (4) as an energy boost, (5) to suppress appetite for weight loss purposes, (6) to manage sport-related stress, and (7) to deal with the general stress of college life (Green, 2001). Student-athletes also use drugs to increase their feelings of belongingness with the overall campus population (Williams et al., 2008).

Disordered Eating. The likelihood of a student-athlete developing disordered eating symptoms varies based on gender. As a standard rule, female students, both athletes and non-athletes, face internal and external pressures to remain thin (Greenleaf, Petrie, Carter, & Reel, 2009). Internal and external pressures might include negative mood states, low self-esteem, desire for weight control, involvement in a hurtful relationship outside of athletics, and perfectionism (Arthur-Cameselle & Quatromoni, 2011). Findings on whether athletic involvement places female student-athletes at greater risk of developing disordered eating symptoms are inconsistent.

On one hand, researchers correlate a female's participation in athletics with heightened concerns about weight and the promotion of pathogenic eating behaviors. Greenleaf and colleagues (2009) found that 19% of female student-athletes showed partial symptoms of disordered eating. Conversely, other studies found that a female's participation in college sports was a protective factor to the development of disordered eating. Wollenberg, Shriver, and Gates (2015) found that 6.6% of female student-athletes showed symptoms of disordered eating. McLester, Hardin, and Hoppe (2014) found that 8% of female student-athletes were susceptible to disordered eating symptoms. However, this study found that 10% of female student-athletes had low self-esteem and 12% of female student-athletes were dissatisfied with their current body image.

While study results vary, research shows that female student-athletes struggle with disordered eating much like other female

college students. However, in addition to the internal and external pressures discussed above, female student-athletes are also likely to develop disordered eating patterns to handle circumstances unique to athletic participation. Such circumstances might include modeling the behaviors of teammates, enhancing sport performance, and addressing negative comments of a coach, teammate, opposing players, and fans (Arthur-Cameselle & Quatromoni, 2011 Wollenberg et al., 2015).

Male student-athletes are less likely to develop disordered eating symptoms than female student-athletes. According to Chatterton and Petrie (2013), less than 2% of male student-athletes met clinical criteria for disordered eating. However, certain male student-athletes are at a high risk of disordered eating. College wrestlers as compared to other male student-athletes are more than twice as likely to experience disordered eating (Bratland-Sanda & Sundgot-Borgen, 2013; Chapman & Woodman, 2016).

Overall, male student-athletes were most likely to develop disordered eating patterns to address coach/teammate pressure, to lose or gain weight for weigh-in, to enhance sport performance, or because of their internal association that more fit student-athletes receive more playing time (Baum, 2006).

Outside of gender specific findings, research shows that disordered eating is more common amongst male and female student-athletes who participate in a sport where body weight is emphasized (e.g., cheerleading, distance running, and wrestling) (Baum, 2006). Furthermore, disordered eating is less common in sports that use referees as opposed to sports that use judges to gauge competition (Baum, 2006).

Importance of this Study

Knowing the rates at which student-athletes experience psychosocial risks, it becomes clear that the NCAA and athletic departments must provide support services to assess and intervene when student-athletes disclose their needs. This study provides one of the only examinations of the current availability of these psychosocial services. Recognizing whether or not services are available will give insight into the role the NCAA and athletic departments play in properly utilizing the revenues generated by student-athletes.

While this study looked at the overall availability of services across all NCAA division levels, the researcher also explored differences amongst division levels. This is important knowing that Division I athletic departments receive nearly twice the budget for support services as Division II and III programs. However, research identifies that student-athletes at Division II and III programs are more likely to experience psychosocial challenges than Division I student-athletes.

The findings from this study will help the NCAA and athletic departments explore the job they are doing providing services

and/or promoting services. From a practice perspective, these findings could provide the eye-opener that the NCAA and athletic departments need to take the next step in advocating for student-athlete well-being. The more available services are the greater likelihood that college sports will not be harmful to the life aspiration of a student-athlete (Chatzisarantis & Hagger, 2007). The psychosocial challenges impacting student-athletes are serious. Sadly, some of these students-athletes are leaving with more than a college degree – they are leaving with psychosocial risks that can have a long-term impact on their adulthood.

Methods

Research Questions

Knowing that athletic directors have a large voice in how support services are structured, this study drew comparison between athletic directors' perceptions and the perceptions of student-athletes as it related to the availability of athletic, academic, and psychosocial services.

The two research questions for this study focused on the availability of current support services. First, are there significant differences between a college athletic director's perception of the availability of athletic, academic, and psychosocial services based on their NCAA division membership? Second, are there significant differences between a student-athlete's perception of the availability of athletic, academic, and psychosocial services based on their NCAA division membership?

Research Design

For this exploratory study, the researcher used a cross-sectional, web-based survey design to collect information from athletic directors and student-athletes at NCAA affiliated colleges or universities.

To determine the desired sample size, the researcher began by selecting the statistical tests necessary to answer the research questions. The researcher used a Multivariate Analysis of Variance (MANOVA) for answering the research questions. This researcher used a statistical power of 0.80 and a medium effect size. With the lack of existing research to build a theoretical framework, the researcher used a medium as opposed to small or large effect size. The researcher used confidence intervals of 0.05, which were liberal rather than accurate estimates. Considering these factors, the desired sample size for this study was a minimum of 98 athletic directors and 249 student-athletes (Faul, Erdfelder, Lang, & Buchner, 2007). The final sample included 132 athletic directors and 349 athletes. With the final sample size, the statistical power for each research question exceeded 0.8 (Faul et al., 2007).

In order to obtain the desired number of responses from athletic directors and student-athletes, the researcher randomly selected 474 colleges or universities. The researcher predicted that only 10-15% of athletic directors would respond to the web-based survey. This anticipated response rate is consistent with many studies using web-based surveys (Hoonakker & Carayon,

2009; Munoz-Leiva, Sanchez-Fernandez, Montoro-Rios, & Ibanez-Zapata, 2010). It was difficult to anticipate the number of student-athlete responses for this study. First, multiple student-athletes could respond from each college or university. Second, it was unknown to the researcher how many student-athletes would receive a copy of the survey since athletic directors were responsible for asking their athletes to participate.

The researcher used publicly available and complete lists of colleges and universities from the NCAA (2014) to conduct a proportionate stratified random sampling strategy. The researcher used division membership to identify three strata (Division I, II, and III). Each college or university belongs to only one division level. Nationwide, there are 346 Division I programs (32%), 307 Division II programs (28%), and 439 Division III programs (40%) (NCAA, 2012). The researcher used a table of random numbers, in accordance with the desired sample size, to select 146 Division I programs, 138 Division II programs, and 190 Division III programs to participate in the study.

Once the researcher used stratified random sampling techniques to identify 474 colleges or universities, the researcher used the school's website to obtain the contact information (name and email address) for the athletic director. When contact information was not accurate or unavailable for an athletic director, the researcher contacted the college or university personally to obtain updated information.

Athletic directors completed one version of a web-based survey for their college or university as they are responsible for overseeing all aspects of college athletics. The researcher asked the athletic director to pass along the link for a web-based survey, a cover letter, and a study information sheet to his or her student-athletes for completion. To avoid potential selection bias, the researcher asked the athletic director to send the survey to all student-athletes competing at their university.

Study Participants

Athletic directors. Of the 474 athletic directors contacted, 132 participated in the study (28% response rate).

The researcher collected information about age, gender, race, education level, years in current position, years in administration, and NCAA division membership for each athletic director (see Table 1). The age range for this sample was 27-70 years (M = 49.90). Male athletic directors accounted for 69% of the total sample. A majority of the athletic directors identified as White (94%). The largest percentage of athletic directors had a Master degree (68%). Athletic directors ranged in their time at their current position from 0-35 years (M = 8.32, Median = 5). The average length of time spent in athletic administration was 22.43 years (Median = 23), ranging from 1-41 years. The largest

percentage of athletic directors worked at the Division II level (36%).

The researcher also gathered basic information about each college or university, which included enrollment size, religious affiliation, and whether there was an affiliation as a HBCU. Enrollment size ranged from 570-30,000 students (M = 6,580, Median = 2,624). Approximately 59% of respondents worked at a college or university with a religious affiliation. The most common religious affiliations were Methodist (11%) and Catholic (10%). Five (4%) of the athletic directors worked for a HBCU.

Student-athletes. The researcher collected information about the age, gender, race, class standing, number of years playing college athletics, sport played, NCAA division membership, and profile of sport for the 349 student-athletes that participated in the study (see Table 2). The age range for this sample was 18-25 years (M = 19.44). Female student-athletes accounted for 55% of the total sample. A majority of the student-athletes identified as White (74%). Thirty percent of the respondents were sophomores in college. Approximately 45% of student-athletes were in their first year of competing in college athletics. The largest percentage of student-athletes competed at the Division III level (39%). Over half of the student-athletes (56%) identified their sport to be low profile. Student-athletes from this sample competed in 18 different sports. The most popular sports played were soccer, basketball, football, and softball.

Measures/Instruments

Development of survey questionnaire. The researcher was not able to locate previously validated surveys for this study. Thus, the researcher developed a new survey questionnaire for athletic directors and for student-athletes. The researcher provided the draft survey to a panel of five experts in the field of college athletics for their review and feedback of the survey's readability, content, length, and face validity. The researcher also tested for internal consistency of the questionnaires by using Cronbach's α. For the athletic director questionnaire there was a Cronbach's α of 0.88. The student-athlete questionnaire had a Cronbach's α of 0.92. Both surveys consisted of nine questions about service availability.

Athletic director survey. Questions about service availability were related to nine support services, which were further broken down into three distinct categories. First, athletic services included athletic training and medical services. Second, academic services included academic advising, career development, and tutoring services. Third, psychosocial services included mental health services, substance abuse services, alcohol addiction services, and suicide prevention. Regarding service availability, athletic directors responded to how available each of the nine support services are to their student-athletes on a

nine-point Likert scale ("0 = Never" to "8 = All the Time"). The researcher elected for a nine-point Likert scale so participants would have enough points of discrimination and variance for their thoughts.

Student-athlete survey. Questions about service availability included the same list of services used in the athletic director survey. Regarding service availability, student-athletes were asked when needed, how available are each of the nine support services on their campus ("0 = Never" to "8 = All the Time").

Demographics. All study participants answered questions about their age (years), gender, ethnicity, and NCAA division membership. Athletic directors identified the time spent in their current position (years), time spent working in college athletics (years), and their highest level of education. The researcher also asked athletic directors to identify their college or university enrollment size, religious affiliation (if applicable), and whether they worked for a HBCU. Student-athletes had to identify the sport(s) they played, the profile of their sport (high profile referred to sports with geographic importance, strong fan support, increased media attention and/or higher rates of athletic department funding), class standing, and the number of years they have competed in college athletics.

Data Analysis

There was one independent variable in this study - NCAA division membership (I, II, or III). This variable was categorical. There were multiple dependent variables for this study as the researcher created composite (sum) scores. The researcher calculated three composite scores for each type of available service: athletic, academic and psychosocial services.

The researcher used descriptive statistics to provide details about the sample and an overview of the survey results. The descriptive statistics also allowed the researcher to compare athletic directors' perceptions to student-athletes' perceptions in regards to service availability. The researcher used SPSS 21.0 for Windows to complete these statistical tests.

Each research question used a MANOVA. These tests allowed the researcher to examine the mean differences between levels of the independent variable(s) on three dependent variables related to each question. The use of MANOVAs not only protected the inflation of type I error, but also allowed the researcher to examine group differences on each dependent variable, as well as group differences on the combined construct (Field, 2009).

Results

Descriptive Statistics

Availability of support services. The researcher asked athletic directors and student-athletes to rate the current level of availability of athletic, academic, and psychosocial services on their campus (see Table 3). Athletic directors and student-

athletes both identified athletic and academic services to be the most readily available services on their campus. The services that athletic directors and student-athletes perceived as being the least available were the psychosocial services. Overall, student-athletes (overall mean = 5.38) viewed all services as being less available than athletic directors (overall mean = 6.24). The results of a *t*-test showed a significant difference between these two overall means ($p = 0.002$). This was especially true for psychosocial services as student-athletes (overall mean = 4.23) viewed these services as being less available than athletic directors (overall mean = 5.40).

Statistical Assumptions

MANOVA. The researcher used a MANOVA to answer the research questions. Prior to analysis, data for all research questions were evaluated to ensure that the assumptions for this multivariate test were fulfilled. All assumptions of the MANOVA were satisfied.

Result of the MANOVA

Main effect – NCAA division membership (athletic director). The results of the MANOVA showed an overall significant difference between NCAA division membership and a college athletic director's perception of the current availability of athletic, academic, and psychosocial services (Pillai's Trace = 0.19, $F_{(2, 129)} = 4.37$, $p < 0.001$). Division level accounted for 10% of the variance in an athletic director's perceptions of service availability ($\eta^2 = 0.10$).

The results of the post hoc between-subjects effects indicated that athletic directors differed significantly based on their NCAA division level in their perception of how available psychosocial services are on their campus ($F_{(2, 129)} = 6.08$, $p = 0.003$, $CI_{95} = (24.28, 26.62)$, $\eta^2 = 0.09$). Division III ($M = 27.94$) athletic directors perceived significantly more availability of psychosocial services than Division I ($M = 22.79$) athletic directors (See Table 4). There were no significant differences between NCAA division level and athletic directors' perception of availability for athletic ($F_{(2,129)} = 0.33$, $p > 0.05$, $\eta^2 = 0.01$) and academic services ($F_{(2,129)} = 1.15$, $p > 0.05$, $\eta^2 = 0.02$).

Main effect – NCAA division membership (student-athlete). The results of the MANOVA showed an overall significant difference between NCAA division membership and a student-athlete's perception of the current availability of athletic, academic, and psychosocial services (Pillai's Trace = 0.13, $F_{(2, 346)} = 7.89$, $p < 0.001$). Division level accounted for 7% of the variance in a student-athlete's perception of service availability ($\eta^2 = 0.07$).

The results of the post hoc between-subjects effects indicated that student-athletes differed significantly based on their NCAA division level in their perception of how available athletic services are on their campus ($F_{(2, 346)} = 12.27$, $p < 0.001$, $CI_{95} = (14.12, 15.28)$, $\eta^2 = 0.07$). Division I ($M =$

15.37) and Division II (M = 15.18) student-athletes perceived significantly more availability of athletic services than Division III (M = 14.60) student-athletes.

Student-athletes also differed on their perception of availability for academic services ($F_{(2, 346)} = 7.35$, $p = 0.01$, CI_{95} = (21.23, 23.03), $\eta^2 = 0.04$). Division I (M = 23.39) student-athletes perceived significantly more availability of academic services than Division III (M = 20.88) student-athletes.

Student-athletes' perceptions on the availability of psychosocial services differed by division level too ($F_{(2, 346)} = 11.23$, $p < 0.001$, CI_{95} = (9.54, 12.09), $\eta^2 = 0.06$). Division I (M = 12.75) and Division II (M = 11.19) student-athletes perceived significantly more availability of psychosocial services than Division III student-athletes (M = 8.49). See Table 5 for a complete breakdown of the MANOVA results.

Discussion

Significant Findings

Division I and Division II student-athletes perceived athletic services to be more readily available at their colleges or universities than Division III student-athletes. Division I and Division II programs place a larger emphasis on athletics by offering athletic scholarships, spending more money on athletic programming, and finding more ways to produce revenue through athletic functions (Foster, 2014; Gill, 2014; USA Today, 2014). Knowing that these programs place a larger emphasis on competition and generate increased revenue, it is logical they receive a larger share of NCAA revenues and can spend more on services such as athletic training and sports medicine (USA Today, 2014).

Student-athletes also perceived that Division I programs had significantly more availability of academic services than Division III programs. Division I programs are more likely to provide student-athletes with dedicated academic advisors, specialized orientation assistance, built-in study tables, and hired tutors (Armstrong & Oomen-Early, 2009). Offering these services is in direct relation with the NCAA's (2016a) Academic Progress Rate (APR) and Graduation Success Rate (GSR) standards for Division I programs. To ensure Division I programs are in compliance with these standards, the NCAA provides more funds in academic support services. The academic success of Division II and III programs are not monitored with APR and GSR scores.

Descriptive statistics on the availability of support services also presented significant findings. First, student-athletes viewed psychosocial services as being less available on their campus than did athletic directors at each division level. Second, both athletic directors and college athletes at all division levels indicated that psychosocial services were less available than both athletic and academic services. Specifically, Division III athletic directors perceived

psychosocial services to be significantly more available than Division I programs. Student-athletes shared the opposite viewpoint, in that Division I and Division II student-athletes perceived psychosocial services to be more readily available than Division III student-athletes.

Equality of Psychosocial Services

It is alarming to see that both student-athletes and athletic directors believed psychosocial services are not as readily available on their campus as athletic and academic services, especially knowing that mental health is the largest problem facing the student-athlete population (NCAA, 2013b). One major concern is the number of students that might not receive services if help is not available to them (Cox, 2015).

Using principles of distributive justice (Mahoney, Hums, & Riemer, 2005), it is evident that more must be done to address the lack of resources available for mental health counseling, alcohol and addiction services, services for disordered eating, and suicide prevention. The level of psychosocial services available to student-athletes should not be linked to revenue production, but should be based on the equality of promoting the short- and long-term health of student-athletes (Patrick, Mahoney, & Petrosko, 2008). Psychosocial services should also be equal across division levels. As evident by existing research, rates of mental health disorders are similar across membership (NCAA, 2013c). Having these services readily available might also dispel current stigmas that athletes should be mentally tough – not mentally ill (Baumann, 2016; Carr & Davidson, 2015).

Study Limitations

This research study had limitations that might have impacted the results. First, despite an attempt to randomly select an initial study sample, the response rates made the final sample more of an availability sample. This causes concerns with the generalizability of the findings. Second, the measurement tools used for this research were constructed specifically for this study. While the researcher was able to check for face and content validity and internal consistency reliability, additional information about the reliability and validity of the tools remains unknown. Third, the findings in this study presented similar challenges as previous research, with only having small effect sizes (Armstrong & Oomen-Early, 2009; Watson & Kissinger, 2007; Yusko et al., 2008). Fourth, this study relied on self-reported data. Thus, there is no way to independently verify participant responses.

Directions for Future Research

In order to promote the availability of psychosocial services, future research should examine how athletic departments currently distribute their funds from the NCAA. Research should also evaluate the existing service structure to further explore service accessibility, service effectiveness, and barriers to receiving services.

From the viewpoint of a practitioner, future research should evaluate existing and new practice models to determine what evidence-based approaches are best suited for assessing and intervening when a student-athlete is experiencing psychosocial challenges. This research should also explore interprofessional models to ensure that all academic, athletic, and psychosocial needs of student-athletes receive proper attention. Finally, future research should look at strategies to empower student-athletes to advocate for the services they need.

Conclusion

Sports come with inherent risks. While the current environment certainly does not turn a blind eye to student-athlete safety and well-being, there are areas where improvements might go a long way. While risks are engrained in athletics, these risks should not include such high percentages of depression, suicidal ideation, alcohol abuse, substance abuse, or disordered eating. If psychosocial services are not more readily available, what happens to the estimated 148,500 student-athletes suffering from depression (Cox, 2015), the 22,500 student-athletes contemplating suicide (Miller & Hoffman, 2009), or the 99,000 student-athletes using marijuana (NCAA, 2013c)?

Research of this nature emphasizes the psychosocial need of athletes and encourages the NCAA, athletic departments, and practitioners to do more to promote the dignity and worth of student-athletes. If the NCAA no longer wants mental health risks to be a top concern, providing more services could be the first step needed.

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Tables

Table 1

Athletic Director Demographics (N = 132)

Demographic Characteristic	*N*	%
Age (*M*, *SD*)	49.90 (9.96)	
Years in Current Position (*M*/*Median*, *SD*)	8.32/5 (7.99)	
Years in Administration (*M*/*Median*, *SD*)	22.43/23 (10.12)	
Race		
White	124	94%
Black	6	5%
Multi-racial	2	1%
Education Level		
Bachelor	19	14%
Master	90	68%
Doctorate	21	16%
No Four Year Degree	2	2%
NCAA Division Membership		
Division I	38	29%
Division II	48	36%
Division III	46	35%

Table 2

Student-Athlete Demographics (N = 349)

Demographic Characteristic	*N*	%
Age (*M*, SD)	19.44 (1.26)	
Gender		
Male	157	45%
Female	192	55%
Race		
White	259	74%
Black	45	13%
Multi-racial	32	9%
Asian	7	2%
American Indian	5	1%
Pacific Islander	1	<1%
Class Standing		
Freshman	94	27%
Sophomore	104	30%
Junior	76	22%
Senior	75	21%
Years Playing Collegiately		
First Year	157	45%
Second Year	91	26%
Third Year	71	20%
Fourth Year	30	9%
NCAA Division Membership	93	27%
Division I	120	34%
Division II	136	39%
Division III		
Profile of Sport		
High	152	44%
Low	197	56%

Table 3

Availability of Support Services: Perceptions of Athletic Directors and Student-Athletes

Service	Athletic Director *M* (*SD*)	Student-Athlete *M* (*SD*)
Athletic Training	7.61 (0.75)	6.81 (1.59)
Tutoring Services	6.94 (1.44)	6.38 (2.04)
Academic Advising	6.86 (1.27)	6.66 (1.67)
Medical Services	6.85 (1.49)	5.79 (2.16)
Career Development	6.25 (1.71)	5.93 (2.08)
Mental Health Services	5.65 (1.87)	4.42 (2.38)
Substance Abuse Services	5.49 (1.80)	4.29 (2.33)
Alcohol Addiction Services	5.47 (1.78)	4.28 (2.34)
Suicide Prevention	5.00 (2.21)	3.88 (2.04)

Note: Respondents were asked to indicate service availability on a nine-point scale (0 = Never to 8 = All the Time)

Table 4

Results for Service Availability (Athletic Directors)

Service Type	Division	*M(SD)*	Post-hoc Results
Athletic	I	16.63 (1.92)	
	II	16.50 (1.49)	
	III	16.28 (2.45)	
Academic	I	23.82 (2.97)	
	II	22.69 (3.84)	
	III	22.78 (4.13)	
Psychosocial*	I	22.79 (6.24)	I < III (p = 0.002)
	II	25.62 (7.06)	
	III	27.93 (6.77)	

*****$F_{(2, 129)} = 6.08$, $p = 0.003$, $CI_{95} = (24.28, 26.62)$, $\eta^2 = 0.09$

Table 5

Results for Service Availability (Student-Athletes)

Service Type	Division	*M(SD)*	Post-hoc Results
Athletic*	I	15.37 (2.84)	I > III (p < 0.001)
	II	15.18 (2.81)	II > III (p < 0.001)
	III	14.60 (3.60)	
Academic**	I	23.39 (4.17)	I > III (p < 0.001)
	II	22.12 (4.74)	
	III	20.88 (5.47)	
Psychosocial***	I	12.75 (6.89)	I > III (p < 0.001)
	II	11.19 (8.08)	II > III (p = 0.006)
	III	8.49 (5.74)	

*$F_{(2, 346)} = 12.27$, $p < 0.001$, $CI_{95} = (14.12, 15.28)$, $\eta^2 = 0.07$
**$F_{(2, 346)} = 7.35$, $p = 0.01$, $CI_{95} = (21.23, 23.03)$, $\eta^2 = 0.04$
***$F_{(2, 346)} = 11.23$, $p < 0.001$, $CI_{95} = (9.54, 12.09)$, $\eta^2 = 0.06$

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Examination of the 3x2 Achievement Goal Model in Collegiate Recreation: Comparison Across Sport Programs

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Sport is a central achievement context through which participants' direct competence-related behavior to achieve desired outcomes. Achievement goal theory provides a framework for understanding self-directed behavior in achievement contexts. Theorists postulate that achievement goals reflect one's purpose and anticipated outcomes which guide behavior. To assess this psychological construct, several achievement goal measures have been developed, from a dichotomous model (Nicholls, 1989) to the most recent 3x2 model (Elliot, Murayama, & Pekrun, 2011). In the present research, the 3x2 achievement goal model (i.e., task-approach, task-avoidance, self-approach, self-avoidance, other-approach, other-avoidance) was translated for the collegiate recreational sport domain and tested against alternative theoretical models. A questionnaire was developed and administered to recreational sport participants (N = 614) at a large, post-secondary institution in the United States. Using confirmatory factor analysis (CFA), the researchers found the 3x2 model to provide a better fit than the alternative theoretical models. These findings support the most recent theoretical advancement of the achievement goal construct. Through use of multivariate analysis of variance, significant differences across the six achievement goals were found between intramural and sport club participants. These results have implications for researchers and recreational sport practitioners seeking to measure and understand the motivational differences across sport participants.

A central motivation construct prevalent in sports psychology literature is that of achievement goals, which are postulated to direct competence-related behavior (Conroy, Elliot, & Hofer, 2003), such as sport

involvement. Within the broader context of sport, there are several distinct sport models that are characteristic of diverse motivations. The achievement goals of collegiate sport athletes are likely to differ from that of collegiate recreational sport participants, which are subsequently likely to differ from that of youth sport participants. Collegiate recreation is a unique context in which to study achievement goals due to the diverse program offerings, including intramural sports, sport clubs, group fitness, aquatics, outdoor adventure, among other programs (Blumenthal, 2009). Through a greater understanding of the motivations of diverse recreation participants, practitioners will be more equipped to effectively design sport programming and influence participant behaviors.

Several theoretical models have been developed during the past three decades to conceptualize the achievement goal construct. More specifically, the literature highlights four primary models, including the dichotomous (Nicholls & Dweck, 1979), trichotomous (Elliot & Harackiewicz, 1996), 2x2 (Elliot & McGregor, 2001), and 3x2 (Elliot et al., 2011) models. With the recent development of the 3x2 achievement goal framework, there is opportunity to study the achievement goals of recreational sport participants with greater precision, which will provide more information for practitioners to strategically design and deliver sport programs. The present research study was designed to examine the achievement goal construct within the collegiate recreational sport domain, with a dual-focus of (1) translating the 3x2 achievement goal model to the collegiate recreational sport context and testing the structure of the measurement model against alternative theoretical models, and (2) examining achievement goal differences across collegiate recreational sport groups.

Achievement Goal Theory

Achievement goal theory is a prominent motivation construct, which investigates the causes behind one's behavior (LeUnes, 2008). Achievement goals reflect one's purpose behind their behavior in achievement contexts as well as one's anticipated competence-related outcomes he/she hopes to attain or avoid from the behavior (Cury, Elliot, De Fonseca, & Moller, 2006; Elliot, 2005; Roberts, Treasure, & Conroy, 2007). The achievement goal construct, having emerged during the early 1980s, originally distinguished achievement goals by how competence is defined (Elliot, 2005). Nicholls (1984) postulated that two conceptions of ability (i.e., undifferentiated and differentiated) account for how competency is defined in achievement contexts, which then serves as the criteria used to assess successful achievement. An undifferentiated concept of ability does not distinguish between ability and effort, for which ability is evaluated through task mastery and personal improvement. In comparison, a differentiated concept of

ability separates ability and effort, with the evaluation of ability based upon interpersonal comparison of effort and ability.

When considering the two conceptions of ability, an undifferentiated approach has been associated with mastery achievement goals, for which intrapersonal and absolute evaluation are used to determine successful achievement. Comparatively, the differentiated concept of ability aligns with performance achievement goals, which use interpersonal evaluation to assess success. Achievement goal theorists have also used the terms "task" and "ego" to reflect mastery and performance achievement goals respectively. As a whole, mastery achievement goals emphasize developing competence, while performance achievement goals focus on displaying competence (Cury et al., 2006; Elliot, 2005).

Achievement Goal Models

Several achievement goal models have emerged as the theory has evolved. The original dichotomous model differentiates achievement goals by definition of competency alone, without consideration of how competency is valenced (Elliot, 1999; Nicholls, 1984), resulting in omnibus achievement goals. As the theory has evolved, competence has been linked with approach and avoidance tendencies (Elliot & Covington, 2001). Moreover, one either approaches the positive possibility of demonstrating competence, or avoids the negative possibility of demonstrating incompetence. The approach and avoidance tendencies towards competency are a function of valence. Models of the achievement goal construct have evolved to incorporate this valence component of competency to more effectively define the construct. Within achievement goal literature, four primary models have been developed and heavily used in empirical studies, including the dichotomous, trichotomous, 2x2, and 3x2 achievement goal models. Each model will be framed within the context of the 3x2 model tested in the current study, using 'task' and 'self' to indicate mastery-based goals and 'other' to indicate performance-based goals.

Dichotomous model. Nicholls and Dweck (1979) are recognized for the development of the dichotomous achievement goal model (as cited in Elliot, 2005). The dichotomous model emphasizes mastery and performance achievement goals based upon how competency is defined, whereby all 'task' and 'self' items load onto a joint mastery latent factor and all 'other' items load onto a joint performance latent factor. Dweck and Leggett (1988) considered the achievement goal construct to be omnibus, in that both goals have approach and avoidance tendencies, while Nicholls (1984) characterized goal orientations as approach-oriented. Although still a prominent achievement goal framework, the dichotomous model has been criticized for failing to incorporate the approach-avoidance distinction commonly found in motivation theory (Elliot, 2005)

Trichotomous model. The dichotomous model was expanded to incorporate the approach-avoidance distinction within the performance goal, creating a trichotomous achievement goal model, including mastery, performance approach, and performance avoidance goals (Elliot & Harackiewicz, 1996). As there are variations of the trichotomous model, Conroy et al. (2003) labeled this specific trichotomous model tripartite model A, whereby all 'other' items load onto their hypothesized latent factors, and all 'task' and 'self' items onto a joint mastery latent factor. The mastery goal was considered approach-oriented based upon the supposition supported by achievement goal theorists that mastery goals focus on attaining competency and therefore facilitate positive outcomes (Elliot & Harackiewicz, 1996; Nicholls, 1989). The trichotomous model has been criticized for its neglect of mastery-avoidance goals, which Yperen (2006) found to be a prominent achievement goal construct with almost one-third of respondents identifying mastery-avoidance as their dominant achievement goal.

2x2 model. Elliot (2005) proposed the mastery achievement goal, without consideration of the approach-avoidance distinction, to be an inadequate measure of mastery goals as most measures only considered positive mastery possibilities. The tripartite model A was expanded to incorporate the approach-avoidance distinction within the mastery achievement goal, resulting in a 2x2 framework which includes mastery approach, mastery avoidance, performance approach, and performance avoidance goals (Elliot & McGregor, 2001). The 2x2 model consists of all 'other' items loading onto their hypothesized latent factors, all task-approach and self-approach items loading onto a joint mastery approach latent factor, and all task-avoidance and self-avoidance items loading onto a joint mastery avoidance latent factor. A criticism of the 2x2 model is that of the precision of the mastery-based goals, as they fail to differentiate an individual's focus on the task from their focus on personal improvement (Mascret, Elliot, & Cury, 2014).

3x2 model. Among the achievement goal models, competency has consistently been defined by mastery and performance achievement goals. To increase the precision of the model, Elliot et al. (2011) integrated absolute (task-based), intrapersonal (self-based), and interpersonal (other-based) standards of evaluation into the achievement goal model, in which mastery goals utilize task-based and self-based evaluation and performance goals employ other-based evaluations. The achievement goal model was expanded to incorporate standards of evaluation based upon the possibility that one might pursue mastery goals focused on attaining either task-based or self-based competence independently. The 3x2 achievement goal model is an extension of the 2x2

framework, consisting of six distinct achievement goals, including mastery goals (task-approach, task-avoidance, self-approach, self-avoidance) and performance goals (other-approach, other-avoidance).

Within the context of sport, there are conceptual, empirical, and practical reasons to adopt the 3x2 achievement goal framework over the alternative theoretical models (Mascret et al., 2014). The conceptual differentiation of task-based and self-based goals provide for greater precision in describing competence-related behavior. More specifically, individuals engaged in sport may focus on accomplishing the task at hand or improving their skills. Additionally, existing measures of mastery goals either emphasize task-based standards (Wang, Biddle, & Elliot, 2007), self-based standards (Conroy et al., 2003), or a combination of both (Riou et al., 2012). This variation suggests that measures of mastery goals may actually be measuring different constructs, making subsequent interpretation difficult. From a practical standpoint, mastery goals are most often found associated with positive outcomes (Adie & Jowett, 2010; Lower, Turner, & Petersen, 2014; Nien & Duda, 2008). Therefore, in order to effectively design sport programs to enhance mastery goals, a more precise understanding of the mastery achievement goal construct is necessary.

Achievement Goals in Sport

The achievement goal construct has been used in sport to better understand the psyche of an athlete and predict sport-related behaviors. Achievement goal measures have been used to predict psychological and emotional functioning (Adie, Duda, & Ntoumanis, 2010); cognitive anxiety (Kavussanu & Morris, 2009); perceived performance (Stoeber, Uphill, & Hotham, 2009); and feelings of success (Gilson, Chow, & Ewing, 2008). When considering sport-related behaviors, the achievement goal framework has been found to be an important construct to explain disordered eating among female athletes (de Bruin, Bakker, & Oudejans, 2009) and drop-out rates in youth sport (Cervelló, Excartí, & Guzmán, 2007), among a variety of other behaviors. Overall, mastery and approach oriented goals are most frequently associated with positive outcomes, comparative to performance and avoidance goals (Kavussanu, White, Jowett, & England, 2011; Lower et al., 2014; Spray, Wang, Biddle, & Chatzisarantis, 2006). However, within certain sport contexts, performance-approach goals have also been found related to positive outcomes (Elliot, Cury, Fryer, & Huguet, 2006; Stoeber et al., 2009).

Achievement goal orientations have been found to vary based on individual differences (Duda & Nicholls, 1992) and situational factors (Seifritz, Duda, & Chi, 1992). To examine these variations in goal perspectives within the sport domain,

studies have investigated achievement goal differences across gender (Abraham, Roberts, & Pensgaard, 2008; Hanrahan & Cerin, 2009; Li, Harmer, & Acock, 1996), sport type (Hanrahan & Biddle, 2002; Hanrahan & Cerin, 2009), and level of sport (Fernando-Rio, Estrada, Mendez-Gimenez, Fernandez-Garcia, & Saavedra, 2014; Lachman, 2014; Yperen & Renkema, 2008).

The literature demonstrates that achievement goal orientations can be induced by the achievement setting (Papaioannou, Milosis, Kosmidou, & Tsigilis, 2007). Studies which have compared achievement goal orientations across various types of sport and sport levels present inconsistent findings. In relation to individual versus team sports, Hanrahan and Biddle (2002) found no achievement goal differences across individual and team sports, while Hanrahan and Cerin (2009) found individual sport athletes reporting higher ego orientation than team sport athletes. With respect to the sport level, Hanrahan and Cerin (2009) found no achievement goal differences across recreational and competitive athletes, while Yperen & Renkema (2008) found higher performance-approach goals among high performing athletes than poor performing athletes, Fernando-Rio and colleagues (2014) found dominant mastery-approach goals among high-level swimmers, and Lachman (2014) found higher ego scores among Division I athletes than Division III athletes.

Recreational sport on college campuses is a critical achievement context as approximately three-fourths of college students use recreation facilities, programs, and services (Forrester, 2014). While most sport participants are motivated by competition, recreational sport is considered a unique population in that competition may be less important than personal improvement (Anderson & Dixon, 2009). However, with diverse program offerings, the motivation of recreational sport participants may significantly vary based upon program involvement. For example, sport clubs is often perceived as the midpoint between intramural sports and collegiate athletics (Cooney, 1979), suggesting a greater emphasis on competition in sport clubs in comparison to intramural sports. A greater understanding of the motivation of diverse recreation users is instrumental for effective programming that will not only recruit and retain participants but also lead to lifelong recreation participation (Anderson & Dixon, 2009). Moreover, as research has found achievement goal orientations to be influenced by the achievement setting (Papaioannou et al., 2007), recreation practitioners have the opportunity to enhance optimal achievement goals. Through intentional programming and staff practices, recreation practitioners can influence the achievement goals of their participants in order to enhance positive outcomes.

Few, if any, studies have examined differences in achievement goals across collegiate recreational sports. Research which has investigated achievement goal variations across individual characteristics and situational factors have predominately used measures reflecting the dichotomous (Task and Ego Orientation in Sport Questionnaire, TEOSQ; Duda, 1989) or 2x2 framework (2x2 Achievement Goals Questionnaire for Sport, AGQ-S; Conroy et al., 2003). The most recent advancement has been the creation of a 3x2 Achievement Goal Questionnaire for Sport (AGQ-S; Mascret et al., 2014), tested within a Sport Education class in France. The researchers used a convenience sample, limiting the generalizability of the results. Furthermore, the participants were asked to assess achievement goals within the broader context of sport, limiting the precision of the measure. Due to these limitations, it is important to validate an achievement goal measure appropriate for recreational sport participants in the United States prior to testing group differences.

Research Questions

The 3x2 achievement goal model is a more rigorous conceptualization of the achievement goal construct. Use of the 3x2 framework to study achievement goals can offer greater implications for researchers and practitioners. There has yet to be a study which has investigated the achievement goals of recreational sport participants using the 3x2 conceptual framework. Therefore, a 3x2 achievement goal scale for recreation sport was developed and tested in the current study, followed by an analysis of achievement goal differences across intramural and club sport groups. Moreover, it was the intention of the researchers to provide a valid tool that can be used by sport researchers and practitioners to gain a greater understanding of the achievement goals of sport participants as well as group differences. In regards to the 3x2 achievement goal model, the following research questions are made:

R1: Does the 3x2 achievement goal measurement model demonstrate an acceptable fit for the collegiate recreational sport domain?

R2: Does the 3x2 achievement goal measurement model demonstrate a better fit than the alternative achievement goal measurement models for the collegiate recreational sport domain?

With respect to achievement goal differences in collegiate recreational sport, the following research question is made:
R3: What are the achievement goal differences between individuals with dominant recreation involvement in intramural sports and individuals with dominant recreation involvement in sport clubs?

Method

Participants and Procedure

The study was conducted at a large, post-secondary institution in the United States. The target population consisted of participants involved in collegiate

recreational sport programs (i.e., intramural sports and/or sport clubs). A cluster sampling technique was utilized to randomly select 48 intramural sports teams and 32 sport club teams in order to select a representative sample. A total of 727 collegiate recreational sport participants from the selected clusters were invited to participate in the study, of which 722 participated (intramural sport: n = 340, sport club: n = 382), resulting in a 99.3% response rate.

As students are able to participate in multiple recreation programs simultaneously, sample 1 (for R1 & R2) was limited to subjects with dominant participation (greater than 50% of total recreation involvement) in sport-based recreation programs (i.e., intramural sports and sport clubs) for the purpose of the study (n = 628). The threshold of 50% of total recreation involvement in sport-based recreation programs was used to ensure the participants' perceived achievement goals were reflective of the recreational sport achievement context, as to support the internal validity of the scale for this specific domain. After eliminating ineligible respondents (those without majority participation in sport-based recreation programs) and incomplete cases, sample 1 consisted of 614 subjects. Sample 1 was predominately male (68.8%), with 91.0% between the ages of 18 to 22. Of the 614 subjects, 84.7% self-identified as Caucasian, 4.7% Asian, 4.5% "two or more races", 2.4% Hispanic, 2.3% African American, and 1.4% identified other ethnicities.

To compare the measurement model and factor scores across intramural sport and sport club participants, sample 2 (for R3) was limited to subjects with dominant participation (greater than 50% of total recreation involvement) in one of the two sport-based recreation programs (eliminating participants with equal participation in both programs). Sample 2 consisted of 250 intramural sport participants and 343 sport club participants, for a total of 593 subjects.

All study procedures were approved by the institution's review board prior to data collection. A hard copy questionnaire was administered to the collegiate recreational sport participants at the conclusion of one of their respective intramural sport team competitions (e.g., flag football) or sport club practices or team meetings. To entice participation in the study, an incentive program was administered, for which one subject from each cluster (i.e., intramural sport or sport club team) was randomly selected and given a $15 gift card.

Measures

The instrument consisted of two primary sections focusing on the subjects' recreational sport involvement and achievement goals within the context of collegiate recreational sport. An open-ended quantitative prompt was created to ascertain the subjects' degree of involvement in prominent recreational sport programs (e.g.,

intramural sports, sport clubs) in order to understand their recreation involvement. The subjects were instructed to "record approximately how many hours on a typical week [they] are involved" for each recreation program.

A modified version of the 2x2 Achievement Goals Questionnaire for Sport (AGQ-S; Conroy et al., 2003) and 3x2 achievement goal model (Elliot et al., 2011) was used to examine a 3x2 achievement goal framework within the sport context. The 2x2 framework is comprised of 4 distinct achievement goals measured by 12 items (3 items per goal) describing different ways participants approach or avoid competence. The 2x2 AGQ-S demonstrated strong factorial invariance, latent mean stability over a 21-day interval, and external validity established through correlations between achievement goal scores and fear-of-failure scores (Conroy et al., 2003).

The 3x2 achievement goal model is an extension of the 2x2 framework in that task- and self-based standards of evaluation are distinguished as unique definitions of mastery competence (Elliot et al., 2011). The 3x2 framework is composed of six achievement goals from within the context of an academic domain. The model consists of 18 items (3 per goal) describing types of goals participants may or may not have for an academic class. Participants are asked to respond on a 7-point Likert-type scale (1 = not true of me … 7 = extremely true of me).

Elliot et al. (2011) found the 3x2 framework to be a good fitting model [$x^2(120, N = 126) = 194.25, p < .01$, CFI = 0.95, TLI = 0.94, RMSEA = 0.070]. Internal consistency analyses of the achievement goals resulted in relatively high reliability (a = .77-.93). The strongest intercorrelations were found between the approach/avoidance goals within the different standards of evaluation (task-based, self-based, other-based). The 3x2 model was tested against 10 alternative models for which the 3x2 model demonstrated better fit than the alternative models.

The proposed 3x2 achievement goal scale for recreational sport was developed for the current study from the 3x2 model, utilizing similar items and scale structure in order to maintain the six achievement goal constructs (see Table 1). The 3x2 model items were modified to be appropriate for the recreational sport context, in which the sport language (e.g., perform) from the 2x2 AGQ-S was utilized. The 7-point Likert type scale used within the 3x2 measure was modified to a 6-point scale (1 = not true of me … 6 = very true of me) based upon the argument that inclusion of a no-opinion option inhibits meaningful measurement (Krosnick et al., 2002). However, it should be noted that the no-opinion option may represent genuine dispositions of the respondents and eliminating this option has the potential to inflate the results (Krosnick et al., 2002). Finally, the subjects were asked to respond to the achievement goal items

within the context of collegiate recreational sport activities.

Once the 3x2 achievement goal scale for recreational sport was developed, a pilot test was conducted to examine the structure and reliability of the new scale. The instrument was pilot tested with 45 undergraduate students enrolled in the Sport and Leisure Studies program at the large institution studied. The population selected for the pilot study was based upon the expectation that those enrolled in a sport-related major would be likely to participate in collegiate recreational sport. Principal component analysis was conducted to examine the structure of the achievement goal scale, for which four components were extracted based on an eigenvalue greater than one (Stevens, 2009), accounting for 68% of the variance. The factor loadings were relatively moderate ranging from 0.496 to 0.693, providing a basis for which items needed modifications. A panel of eight experts – including an author of the 2x2 and 3x2 achievement goal model, recreational sports professional staff, sport management professors, and experts on quantitative research methodology – reviewed the instrument and provided feedback as to the content validity and soundness of the instrument. A final round of revisions was made to the content of the tool based upon results of the pilot test and feedback from the panel of experts. Random processes were utilized to order the achievement goal items within the scale. The developed achievement goal items and proposed relationships can be found in Table 1.

Statistical Analysis

The data were entered into SPSS Statistics 21 software for treatment and analysis. Following data screening, single and multiple imputation data treatment techniques were employed to reduce the amount of missing data. Regression imputation is recommended for a moderate amount of missing values as it is more sophisticated and uses more information when replacing the missing values (Kline, 2011; Schumacker & Lomax, 2010). However, use of regression imputation may result in biased parameter estimates and underestimated error variance.

Once missing data were treated, the subjects' recreational sport involvement was determined. A total recreation involvement variable was calculated by the sum of involvement in intramural sports and sport clubs. Subjects were then grouped by collegiate recreational sport program (i.e., intramural sports or sport clubs) based upon a criteria of greater than 50% involvement in one of the two programs. While the combined sample 1 was used for model testing, sample 2, consisting of individual groups, was used for additional CFAs as well as multivariate analysis of variance (MANOVA) testing.

Once the subjects were grouped by recreational sport involvement, the data set was imported to LISREL 9.1 software to produce a correlation matrix of the

observed variables for CFA and normality statistics (i.e., skewness and kurtosis) of the achievement goal variables. Skewness and kurtosis statistics of the observed variables were calculated, as nonnormal data may affect the parameter estimates, standard errors, and fit indices. Normality was considered to be met if all skewness values fell within the accepted range of +2.00 to -2.00 and kurtosis values fell within the accepted range of +5.00 to -5.00 (Kendall & Stuart, 1958). Multivariate normality was assessed through relative multivariate kurtosis, for which a value of less than +3.00 was considered indicative of multivariate normality (Siekpe, 2005).

Reliability testing was conducted prior to factor analysis in order to determine if CFA is an appropriate analytic approach. To test the reliability of the proposed achievement goal factors, Cronbach's alpha was calculated for each subscale. The alpha coefficient is one of the most pervasive measures of reliability for studies using psychometric scales in the social sciences (Bonet & Wright, 2015; Dunn, Baguley, & Brunsden, 2014). An achievement goal factor was considered reliable with a Cronbach's alpha of .70 or greater (Hair, Anderson, Tatham, & Black, 1998).

After preliminary testing, the correlation matrix was inputted into LISREL 9.1 software and the model relationships and parameters were specified for further factor analysis. CFAs were conducted to confirm the factor structure and compare the proposed model against the three alternative models. Robust maximum likelihood (MLR) estimation was employed for all analyses, as this method of estimation is recommended for slight to moderate non-normal interval data (Morata-Ramirez & Holgado-Tello, 2013). When specifying the relationships between the observed and latent variables, all factors were allowed to correlate and the variance of each latent variable was allowed to be 1.0. Upon running the initial model, the largest factor loading for each factor was fixed to 1.0 and the model was run a second time.

To answer R1 and R2, the observed *t*-values for the individual paths in the model were compared to the critical *t*-value for a two-tailed test at the $\alpha < .05$ level of significance. Once statistical significance of the parameter estimates was determined, the fit of the proposed and alternative models were assessed using the following standards of model fit: a nonstatistically significant chi-square (x^2), a root-mean-square error of approximation (RMSEA) less than .100, a goodness-of-fit index (GFI) and comparative fit index (CFI) greater than .95 (.90 is also considered acceptable), and a standardized root-mean-square residual (SRMR) less than .05 (Schumacker & Lomax, 2010). In order to determine the best fitting model, the parameters, standardized residual matrix, modification indices (MI), expected parameter change (EPC) statistics, and squared multiple correlations (R^2) for each equation of the proposed 3x2 model were evaluated. The model was considered to be theoretically

and empirically supported if the majority of fit indices indicated an acceptable model (Schumacker & Lomax, 2010), and there were no theoretically justifiable modification suggestions. A chi-square difference test was employed to compare the 3x2 achievement goal model with each alternative model to determine if increasing parsimony significantly deteriorated the model fit (Kline, 2011).

Once the factor structure of the achievement goal measurement model was confirmed, the reliability of each subscale was calculated a second time using Cronbach's alpha. Following reliability testing, the data were reduced into corresponding factor scores. Using SPSS Statistics 21 software, the assumptions for conducting a MANOVA were first examined. In addition to the normality statistics previously outlined, residual plots by groups for each dependent variable were examined, for which unsystematic patterns were indicative of independent observations (Stevens, 2009). Furthermore, homogeneity of variance and covariance for each dependent variable were examined through use of Levene's text and Box's test, with a non-significant result demonstrating homogeneity of variance (Stevens, 2009). Once the assumptions were established, a MANOVA was employed to answer R3. The Wilks Δ test criteria was adopted to determine whether there was a multivariate significant difference across groups, based on a $\alpha < .05$ level of significance (Stevens, 2009). Upon examination of the main effect, the univariate analyses of variance (ANOVA) were examined using a Bonferroni correction of $\alpha < .008$, based on six dependent variables (Stevens, 2009).

Results

Data

The questionnaire was administered to 727 collegiate recreational sport participants at a large university, of which 628 eligible individuals completed the questionnaire. Data screening revealed that 9% of cases (n = 57) were incomplete. The Markov chain Monte Carlo (MCMC) multiple imputation method was conducted, resulting in 614 complete cases. Subjects were then grouped by recreational sport program involvement, for which 250 participants were classified within the intramural sport group and 343 within the sport club group.

Normality

Upon examination of the normality statistics (Table 1), univariate skewness and kurtosis for all observed variables fell within the accepted ranges previously noted (Kendall & Stuart, 1958). Furthermore, the moderately small value of the relative multivariate kurtosis (1.623) supports the multivariate normality of the data. The normality assumption was concluded to have been met.

Measurement Model

A correlation matrix of the observed variables was produced (Table 2), and CFA of the proposed 3x2 model was run to

answer R1. With 171 unique values in the covariance matrix S and 51 free parameters, there were 120 degrees of freedom indicating that the model is over-identified and there is room for model modification. All factor loadings were found significant at the $\alpha < .001$ level of significance. The global fit indices of the proposed model [$x^2(120) = 1221.908$, $p < .001$; RMSEA: .099; GFI: .857; CFI: .941; SRMR: .036] suggested an acceptable fitting model as three of the five indices met the standards previously noted. Therefore, in response to R1, the 3x2 achievement goal measurement model was found to demonstrate an acceptable fit for the collegiate recreational sport domain.

Prior to considering model modifications, the alternative models were tested to answer R2. All achievement goal models were over-identified, for which the 3x2 and 2x2 models were found to have an acceptable fit and the trichotomous and dichotomous models were found to be poor fitting (Table 3). Of the four achievement goal models, the 3x2 framework provided the best fitting model. Chi-square difference tests revealed significant deterioration in model fit for every alternative model. Therefore, in response to R2, the 3x2 achievement goal measurement model was found to demonstrate a better fit than the alternative models for the collegiate recreational sport domain.

While the global fit indices for the proposed 3x2 model suggest an acceptable fitting model, with all factor loadings found to be significant, the output indicated possible model modifications. Large standardized residuals were found between Goal 10 and 1 and between Goal 18 and 14. The large residual between Goal 10 and 1 suggest a possible path modification, however the MI does not support this modification. Additionally, the large residual associated with Goal 18 and 14 may suggest a misspecification of correlated measurement error terms. As both variables load onto the same factor, a path modification is not justifiable. Several MI and EPC statistics were provided, of which the modification with the largest anticipated decrease in chi-square (adding a path from Goal 7 to Self-Approach) is not theoretically supported. Therefore, to address the large MI associated with Goal 7, the item was removed for a more parsimonious and better fitting model.

Overall, the modification reduced the standardized residuals and improved the fit of the model, with the majority of fit indices upholding the standards previously noted [x^2 (104) = 961.702, $p < .001$; RMSEA: .094; GFI: .880; CFI: .951; SRMR: .034]. The modification suggestions were once again evaluated, for which no changes were found theoretically sound. Thus, the modified model (Figure 1), with three indices indicating a good fit, was found just. The estimated non-centrality parameter (NCP) of the modified model was 857.702, suggesting a small effect size.

Additional CFA analyses were conducted to determine whether the

modified model was upheld within different recreational sport contexts. The modified model was found to be an acceptable fit for both the intramural sport group [x^2 (104) = 342.67, $p < .001$; RMSEA: .096; GFI: .856; CFI: .936; SRMR: .049] and sport club group [x^2 (104) = 310.543, $p < .001$; RMSEA: .076; GFI: .906; CFI: .959; SRMR: .036], with the majority of fit indices suggesting good fitting models. Review of the suggested modifications supported no additional changes to the models.

Reliability

Initial reliability testing of the proposed achievement goal factors demonstrated high reliability (α = .846 - 945). Upon review of item deletion, the results indicated possible issues with Goals 1, 3, and 7 which slightly reduced their respective scale's reliability statistic ($\Delta\alpha$ = .004 - .010). Reliability testing was conducted for a second time using the modified achievement goal scales, with results demonstrating high reliability for all factors (i.e., task-approach α = .875, task-avoidance α = .875, self-approach α = .886, self-avoidance α = .846, other-approach α = .945, other-avoidance α = .888). Furthermore, item deletion supported the final factor structure resulting from the CFAs.

Multivariate Analysis of Variance

Prior to conducting a MANOVA, the assumptions were first examined, with the normality assumption previously established (see Table 1). In regards to the independence assumption, residual plots by groups for each achievement goal variable demonstrated random, not systematic, patterns, which confirmed the assumption. Furthermore, Levene's test revealed non-significant values for four of the six achievement goals while Box's test demonstrated significant values for all achievement goals, indicating the homogeneity assumption was partially met. As a MANOVA is relatively robust to a violation of homogeneity with relatively equivalent sample sizes (Stevens, 2009), the data were deemed to have met the necessary assumptions.

Once the assumptions were established, a MANOVA was conducted, upon which the multivariate main effect was found statistically significant ($p < .001$). When examining the univariate ANOVAs, four of the six achievement goals were found significantly different between intramural and sport club groups (Table 4; Stevens, 2009). The effect sizes were small to medium (partial n^2 ranging from .02 to .08) and observed power strong (ranging from .96 to 1.00; Stevens, 2009). In response to R3, of the six achievement goals, the sport club group was found to have significantly greater mastery-based achievement goals. Comparatively, the performance-based achievement goals were not significantly different across groups.

Discussion

A 3x2 achievement goal scale for recreational sport was proposed and administered to recreational sport participants at a post-secondary institution. The 3x2 model was tested against alternative theoretical models to confirm the structure of the measurement model. Of the four theoretical models tested, the 3x2 model was found to have the best fit. However, each model demonstrated relatively large chi-square values. The significant chi-square statistics are likely a result of the large sample size (N = 614) as the chi-square model-fit criterion is sensitive to sample size (Schumacker & Lomax, 2010). Chi-square is also a function of degrees of freedom (Schumacker & Lomax, 2010). With 18 observed variables, the number of unique values in the covariance matrix S was much greater than the number of free parameters for each model. This resulted in large degrees of freedom, consequently affecting the chi-square tests. The large sample size and over-identification of the models are possible reasons for the chi-square index suggesting poor fitting models.

As the 3x2 achievement goal model was found to have the best fit out of the four theoretical models, modifications to the 3x2 model were considered to improve the fit of the model. The model was modified to remove Goal 7 from loading onto the task-approach factor. Of the task-approach items, Goal 7 is the only item with the qualifying phrase "to perform", while the other two task-approach items use the qualifying phrase "to master". This discrepancy may be why Goal 7 was an inadequate measure of task-approach goals. While a modification was made to the initial 3x2 achievement goal model, the 3x2 structure of the model was upheld. The modified model was tested within two sport contexts of varying competitive levels (i.e., intramural sport and sport clubs), for which the model was upheld in both contexts. These results support the utility of the model in diverse recreational sport contexts. Overall, the findings of the current study support the most recent theoretical differentiation of achievement goals, which integrate standards of evaluation to define competency (Elliot et al., 2011).

The 2x2 achievement goal model was also found to have an acceptable fit in comparison to the alternative theoretical models. However, chi-square difference tests revealed significant deterioration in the 3x2 model when made more parsimonious. This finding supports Elliot et al.'s (2011) supposition that the 3x2 model provides a better fit than the alternative theoretical models. While parsimony is preferred (Kline, 2011), the 3x2 framework is considered superior due to conceptual, empirical, and practical advantages. Conceptually, the 3x2 achievement goal model differentiates task-based and self-based goals, providing for a more precise measure of mastery goals. Furthermore, as different 2x2 achievement goal measures have been found to focus on either task-

based goals, self-based goals, or a combination of both (Mascret et al., 2014), the differentiation found in the 3x2 framework will support accurate interpretation of the mastery construct. Lastly, more precise information regarding mastery goals will enhance practitioners' ability to intentionally design sport programs, influence the sport environment, and guide participant behaviors. As a whole, the modified 3x2 achievement goal scale for recreational sport can help practitioners better assess sport participants' achievement goals, which will subsequently inform programmatic decisions.

The multiple theoretical models proposed in achievement goal literature suggest a need to first investigate how to appropriately measure achievement goals within a population before utilizing the construct within a research study. Practitioners interested in assessing achievement goals among sport participants should also consider their desired conceptualization of perceived competence when selecting an achievement goal tool. Ultimately, the modified 3x2 achievement goal scale for recreational sport is an appropriate instrument for future research investigating achievement goals within the recreational sport context.

In addition to developing and testing a 3x2 achievement goal scale for recreational sport, the current study sought to compare distinct achievement goals across collegiate recreational sport programs. The findings demonstrate significantly greater perceived mastery-based goals amongst the sport club group compared to the intramural sport group. Furthermore, non-significant differences in perceived performance-based goals were found between the sport club and intramural sport groups. Overall, these results support Papaioannou and colleagues' (2007) assertion that achievement goal orientations can be influenced by the achievement setting.

When examining the distinct achievement goals, mastery-approach goals were found to be the highest perceived achievement goals for sport club participants, supporting Fernando-Rio and colleagues' (2014) study. However, the significant difference in mastery-based achievement goals across collegiate recreational sport programs is contrary to Hanrahan and Cerin's (2009) finding of no differences across sport levels. Furthermore, the non-significant difference in performance-based goals is not consistent with the findings of Yperen & Renkema (2008) and Lachman (2014), which demonstrated higher performance-based goals among higher sport levels (i.e., high performing athletes, Division I athletes).

The differences in achievement goals across collegiate recreational sport programs may be indicative of program design differences. In comparison to intramural sports, the sport club program is student-driven in which the administration and development of the sport is reliant upon student members (Cooney, 1979; Lower et al., 2015). Additionally, participation in

sport clubs can be characterized by purposeful engagement. Club members pay dues, attend regular practices, and possibly participate in extramural competition, with many teams instructed by a coach or captain (Lower et al., 2013; Mull, Bayless, & Jamieson, 2005). The additional responsibility of club operations, meetings, and practice is likely to enhance task- and self-based achievement goals. Comparatively, intramural sport involvement is often limited due to program restrictions (e.g., registration limitations, sport schedules, number of sports administered simultaneously; Lower et al., 2015). Intramural sport teams are unlikely to have a coach and rarely meet outside of competitions for practice. The primary emphasis of the intramural sport program is competition, for which participants can choose among a variety of leagues associated with different skill levels (Lower et al., 2015). These program design differences may explain the greater mastery-based achievement goals reported by sport club participants in comparison to intramural sport participants.

When comparing sport level, sport clubs have been characterized as the median between intramural sport and collegiate athletics (Cooney, 1979). Furthermore, the intramural sport program typically consists of multiple sport leagues corresponding with varying skill levels and interests (Lower et al., 2015). Intramural sport participants might be characterized as recreational or competitive. While the sport club program is often considered a higher sport level, the current study found non-significant differences in perceived performance-based achievement goals across sport club and intramural sport groups. This finding may be due to intramural sport's exclusive focus on competition, rather than the congruent pursuit of development and competition found in sport clubs.

Overall, the current study demonstrates differential achievement goals across collegiate recreational sport programs. Research has predominantly supported mastery- and approach-based goals as antecedents of positive outcomes in sport (Kavussanu et al., 2011; Lower et al., 2014; Spray et al., 2006). Therefore, recreational sport practitioners should examine the structure and design of their programs to determine how the achievement settings might influence participants' achievement goals. Through intentional programming, practitioners can induce distinct goal orientations, thus indirectly enhancing positive outcomes. Programming that incorporates goal setting, instruction, and skill modifications may enhance mastery goals. Furthermore, the use of positive framing, constructive feedback, and management of maladaptive behaviors (e.g., avoidance) by sport coaches and captains may enhance approach goals (Lower et al., 2014).

Limitations and Recommendations

The 3x2 achievement goal scale for recreational sport was developed from

existing measures and pilot tested once prior to its administration in the current study. The first pilot test extracted four factors from the scale as previously noted. Subsequent pilot tests were not conducted to examine the structure of the modified tool, limiting the reliability of the proposed scale. The proposed 3x2 achievement goal model was modified to achieve a better fit. The removal of Goal 7 altered the intended structure of the achievement goal scale (i.e., three items per factor). Future research may want to consider revising Goal 7 to more effectively measure the task-approach goal and therefore maintain the three items per factor scale structure.

Based upon the results of the current study, the six-factor structure was supported over the alternative theoretical models. The more complex conceptualization of achievement goals can provide a greater depth of understanding regarding a sport participant's motivation and perception of competence. Additionally, the greater precision can offer more effective predictors of achievement related outcomes. The 3x2 achievement goal scale for recreational sport should continue to be tested, within various sport contexts, to confirm or disconfirm the 3x2 model structure proposed. Another consideration is the measurement of achievement goals at one point in time. As achievement goals have been found to vary based on environmental cues (Seifritz et al., 1992), they are likely to change over time and not remain constant. Future studies should seek to account for the possible change in achievement goal orientations across achievement goal settings and across time.

The current study had an exclusive focus on recreational sport participants at a single university, limiting the generalizability of the study's results. Future research should consider inclusion of multiple institutions or comparison of different sport domains (e.g., community, recreational, collegiate) for a particular demographic. Based upon the nature of recreation, many collegiate recreational sport participants engage in multiple diverse programs simultaneously. Subsequent studies could assess how these dynamic recreation users' achievement goals differ based on the achievement context. This line of inquiry will provide a greater understanding of the influence of program design on achievement goal orientations. In the end, the 3x2 achievement goal model was upheld for the sport population studied, supporting the most recent theoretical model (Elliot et al., 2011). Future research may consider including antecedents or consequences of achievement goals when utilizing the modified 3x2 achievement goal scale for recreational sport. Expanding our understanding of the motivation of sport participants can provide greater implications for practitioners.

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Tables

Table 1

Descriptive Statistics of Achievement Goal Observed Variables (N = 614)

Observed Variables	*M*	*SD*	Skewness	Kurtosis
Task-Approach				
Goal 7: "To perform the task elements well."	4.915	1.118	-0.920	0.400
Goal 18: "To master my performance of the task."	4.819	1.239	-0.976	0.456
Goal 14: "To master the aspects of my performance."	4.799	1.237	-0.918	0.244
Task-Avoidance				
Goal 16: "To avoid failing to master the task."	4.362	1.471	-0.570	-0.630
Goal 4: "To avoid performing the task elements poorly."	4.533	1.400	-0.806	-0.109
Goal 15: "To avoid performing the task poorly."	4.554	1.346	-0.753	-0.189
Self-Approach				
Goal 11: "To perform better than I have in the past."	4.955	1.090	-0.842	0.023
Goal 1: "To perform well relative to how well I have performed in the past."	4.986	1.148	-1.023	0.384
Goal 6: "To perform better than I typically do."	4.920	1.101	-0.841	0.045
Self-Avoidance				
Goal 12: "To avoid performing worse than I typically do."	4.615	1.334	-0.771	-0.190
Goal 8: "To avoid performing poorly compared to my typical level of performance."	4.710	1.302	-0.921	0.146
Goal 2: "To avoid performing worse than I have in the past."	4.644	1.475	-0.941	-0.060

Continued

Table 1 continued

Other-Approach				
Goal 10: "To perform better than others."	4.484	1.435	-0.751	-0.308
Goal 9: "To do well compared to others."	4.552	1.360	-0.768	-0.179
Goal 5: "To do better than most other performers."	4.507	1.399	-0.711	-0.301
Other-Avoidance				
Goal 13: "To avoid performing worse than everyone else."	4.372	1.513	-0.641	-0.572
Goal 3: "To avoid performing poorly in comparison to others."	4.396	1.548	-0.721	-0.523
Goal 17: "To avoid being one of the worst performers in the group."	4.481	1.527	-0.757	-0.485

Note: Goal 7 was removed from the final 3x2 achievement goal scale for recreational sport.

Table 2

Correlation Matrix of Observed Variables

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Goal 1	1.000																	
2	Goal 2	0.440	1.000																
3	Goal 3	0..394	0.600	1.000															
4	Goal 4	0.461	0.634	0.657	1.000														
5	Goal 5	0..376	0.334	0.594	0.439	1.000													
6	Goal 6	0.584	0.394	0.359	0.495	0.529	1.000												
7	Goal 7	0.578	0.382	0.363	0.523	0.495	0.733	1.000											
8	Goal 8	0.499	0.603	0.522	0.666	0.393	0.549	0.565	1.000										
9	Goal 9	0.401	0.368	0.681	0.495	0.816	0.478	0.464	0.450	1.000									
10	Goal 10	0.374	0.325	0.624	0.413	0.852	0.460	0.443	0.354	0.887	1.000								
11	Goal 11	0.636	0.413	0.377	0.483	0.474	0.755	0.684	0.561	0.484	0.459	1.000							
12	Goal 12	0.525	0.633	0.551	0.643	0.434	0.525	0.487	0.721	0.473	0.390	0.555	1.000						
13	Goal 13	0.336	0.487	0.709	0.592	0.594	0.357	0.343	0.527	0.678	0.607	0.414	0.636	1.000					
14	Goal 14	0.524	0.342	0.323	0.447	0.447	0.639	0.633	0.467	0.409	0.383	0.646	0.474	0.359	1.000				
15	Goal 15	0.474	0.600	0.585	0.707	0.504	0.535	0.537	0.658	0.542	0.462	0.547	0.717	0.689	0.531	1.000			
16	Goal 16	0.444	0.522	0.537	0.646	0.488	0.506	0.488	0.611	0.524	0.429	0.515	0.678	0.613	0.606	0.752	1.000		
17	Goal 17	0.300	0.490	0.662	0.573	0.549	0.341	0.307	0.494	0.640	0.557	0.368	0.607	0.805	0.331	0.662	0.612	1.000	
18	Goal 18	0.528	0.353	0.361	0.475	0.467	0.624	0.627	0.467	0.446	0.398	0.627	0.465	0.345	0.778	0.529	0.604	0.373	1.000

Table 3

Structural Equation Modeling Goodness of Fit Statistics for Theoretical Measurement Models

Models	x^2	*df*	*p*	RMSEA	GFI	CFI	SRMR
3x2 model	1221.91	120	<.001	0.099	0.857	0.941	0.036
2x2 model	1561.11	129	<.001	0.109	0.818	0.923	0.039
Trichotomous model	3152.86	132	<.001	0.157	0.639	0.837	0.071
Dichotomous model	3871.90	134	<.001	0.173	0.576	0.799	0.080

Note. RMSEA: root-mean-square error of approximation; GFI: goodness-of-fit index; CFI: comparative fit index; SRMR: standardized root-mean-square residual.

Table 4

MANOVA Univariate Effects (N = 593)

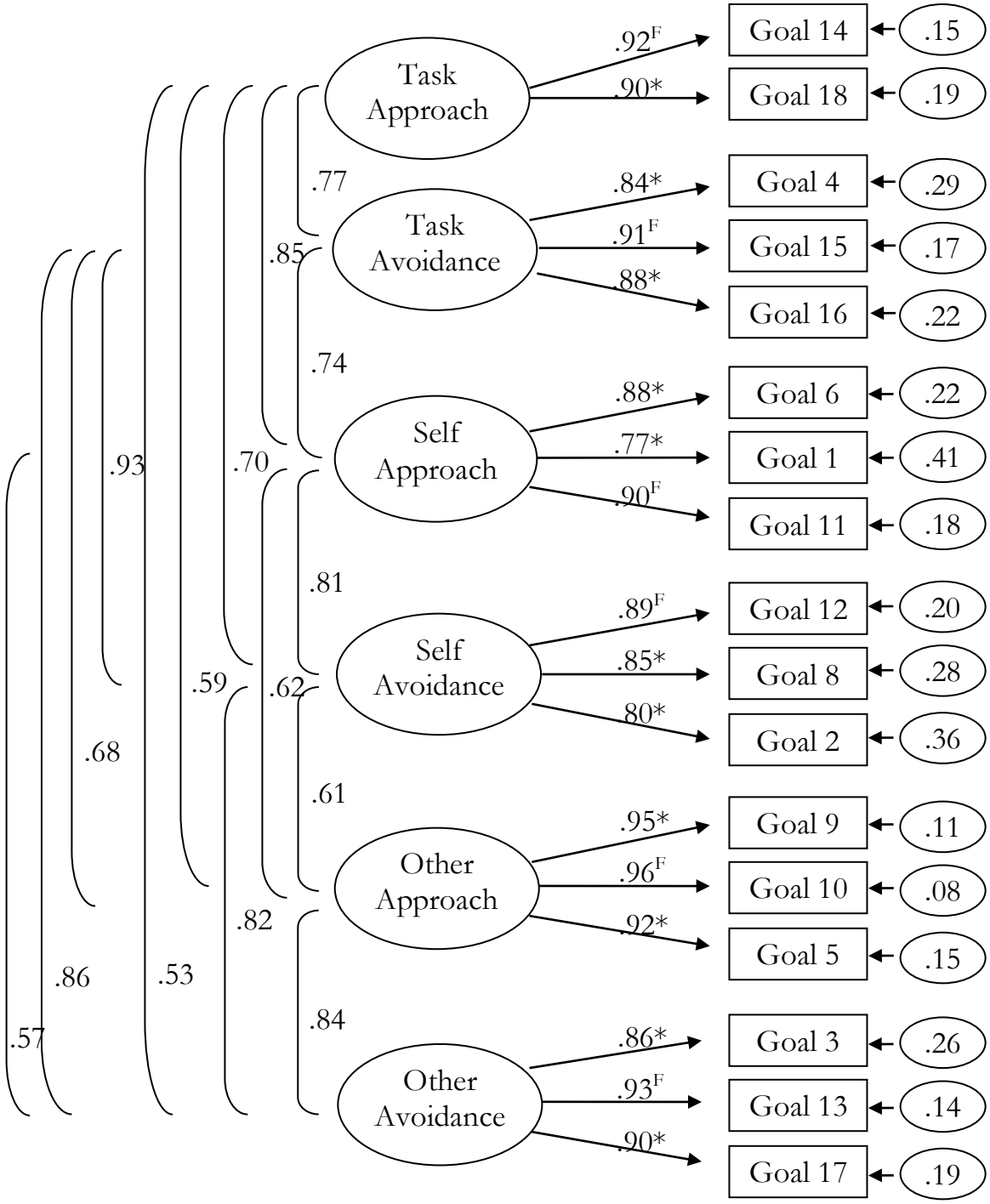
Achievement Goals	IM Sports *M(SD)*	Sport Clubs *M(SD)*	*F* (1, 591)	*p*
Task-Approach (Items: 14, 18)	4.43 (1.26)	5.09 (0.99)	50.44	< .001
Task-Avoidance (Items: 4, 15, 16)	4.26 (1.27)	4.64 (1.22)	12.90	< .001
Self-Approach (Items: 7, 6, 1, 11)	4.72 (1.04)	5.14 (0.86)	28.89	< .001
Self-Avoidance (Items: 12, 8, 2)	4.46 (1.22)	4.82 (1.14)	14.02	< .001
Other-Approach (Items: 9, 10, 5)	4.45 (1.25)	4.56 (1.36)	0.97	0.326
Other-Avoidance (Items: 3, 13, 17)	4.33 (1.33)	4.49 (1.40)	1.80	0.180

Note. Bonferroni correction of $\alpha < .008$ applied.

Figures

Figure 1

Path diagram of modified 3x2 achievement goal model with standardized solutions



Note. The fixed factors are denoted by 'F'. * $p < .001$.

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Psychological Antecedents of Youth versus Adult Participation: An Examination Based on the Sport Commitment Model

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This study examined adult and youth Taekwondo (TKD) participants utilizing the Sport Commitment Model (SCM; Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993). TKD participants (adult, n = 205; youth, n = 227) from four studios completed a questionnaire that included SCM variables (commitment, enjoyment, involvement alternatives, involvement opportunities, personal investments, social constraints, and social support). A multiple-group path analysis compared age groups to assess similarities and differences. Similarities between age groups included enjoyment, involvement opportunities, and personal investments as significant predictors of commitment. Analysis of differences found that involvement alternatives only predicted commitment with adults while social support only predicted commitment with youth. This was the first study examining the SCM with both adults and youth participating in the same sport. Theoretical and practical implications are discussed.

Sport participation is important for physiological and psychological health (Penedo & Dahn, 2005). In order to achieve such benefits, continued participation is imperative. Commitment has been used to explain consistent involvement of sport participants (Carpenter & Coleman, 1998; Casper, Gray, & Babkes-Stellino, 2007). Sport-related literature operationalizes sport commitment as a psychological state representing the desire and resolve to continue sport participation in a particular program, specific sport, or sport in general (Scanlan et al., 1993). Past research has found that highly committed sport participants show

high levels of behavioral involvement and financial investment (Bodet, 2012; Casper et al., 2007; Fernandes, Correia, Abreu, & Biscaia, 2013; Kim, James, & Kim, 2013).

Much of the commitment related research in sport has focused on youth participation and the reasons that youth become initially involved and committed to sport (Carpenter & Coleman, 1998; Weiss, Kimmel, & Smith, 2001). More recently this has been applied to adult participation (e.g., Casper et al., 2007; Fernandes et al., 2013; Young & Medic, 2011). While such research helps to understand commitment to a sport, the differences as to why adults versus youth are committed are still unknown. Such differences between developmental ages may help with marketing sport for both recruiting new participants and retention of current participants. Therefore, the purpose of this study is to investigate adults and youth participating in an identical sport, Taekwondo, to understand what key differences (or similarities) are indicative of commitment to the sport.

Theoretical Framework

The Sport Commitment Model

The Sport Commitment Model (SCM: Scanlan et al., 1993) serves as a theoretical framework to understand the nuances of continued sport participation and psychographic information for marketing and recruitment of new participants. Sport commitment is defined as the "psychological state representing the desire and resolve to continue sport participation" (Scanlan et al., 1993, p. 6). The SCM was adapted from social-exchange theory (Kelley & Thibaut, 1978), the model of interpersonal relationships (Kelley, 1983), and the investment model (Rusbult, 1988). The purpose of developing the SCM was to have a better understanding of the antecedents of sport commitment. For this study, the SCM was chosen based on three important features: 1) Sport commitment addresses psychological attachment to an activity, and does not involve estimations of the actual probability (e.g., intentions); 2) Sport commitment is a product of both cognitive (e.g., thinking) and affective (e.g., emotions) factors; and 3) the model is able to distinguish differing predictors of participants who may report equal levels of commitment (Scanlan & Simons, 1992). The model focuses specifically on commitment in addition to the meaning that underlies the commitment that individuals hold for the activities in which they participate. Lastly, the SCM looks at commitment and its antecedents based on theory from sport participation. Thus, the use of the model versus other models of commitment (e.g., organizational or spectatorship) is more theoretically grounded for the population under study (Casper et al., 2007).

Variables in the Model

The original SCM was posited as having five direct antecedents that can increase or decrease sport commitment: sport enjoyment, involvement alternatives, involvement opportunities, personal

investments and social constraints (Scanlan et al., 1993). Operational definitions of the predictor variables in the SCM are as follows (Scanlan, Simons, Carpenter, Schmidt, Keeler, 1993):

Sport enjoyment is defined as a positive affective response to the sport experience that reflects generalized feelings such as pleasure, liking, and fun.

Involvement alternatives are defined as the attractiveness of the most preferred alternative(s) to continued participation in the current endeavor.

Involvement opportunities are the anticipated benefits that one receives through continued participation such as friendships, social interaction, skill mastery, and physical conditioning.

Personal investments reflect personal resources such as time, effort, and energy that would be lost if participation did not continue.

Social constraints are the social expectations or norms that create feelings of obligation to remain in the activity.

An additional predictor of sport commitment revealed in recent research, grounded in the SCM, is social support (Scanlan, Russell, Beals, & Scanlan, 2003; Scanlan, Russell, Wilson, & Scanlan, 2003).

Social support reflects feelings of encouragement and support that a sport participant receives from significant others who may or may not participate in the sport (Carpenter & Coleman, 1998).

Among these six antecedent variables, sport enjoyment, involvement opportunities, personal investments, social constraints and social support are hypothesized as positive predictors of sport commitment (i.e., contributes to commitment) while involvement alternatives are posited as negative predictors of sport commitment (i.e., detracts from commitment) (Scanlan et al., 1993).

This study tested direct and indirect paths SCM based on the work of Weiss et al. (2001) and Casper et al., (2007). As theorized by Scanlan et al., many SCM studies with youth found enjoyment was the strongest predictor of commitment (e.g., Stein & Scanlan, 1992; Scanlan, Ravizza, & Stein, 1989). When investigating the SCM with youth tennis players, Weiss et al. (2001) modified the original model to further understand the impact of enjoyment. To do this they tested direct/indirect influences of the commitment model to determine if sport enjoyment was indeed masking the effects of the other determinants of sport commitment. Weiss et al. (2001) tested the indirect model and revealed that the indirect model presented a clearer understanding of the other commitment antecedents that were not identified in the direct model. As a follow-up, Casper et al. (2007) compared the direct and indirect models with adult tennis participants and, consistent with Weiss et al. (2001), the indirect model provided a more intricate understanding of sport commitment formation (e.g., personal investment and social constraints emerged as significant predictors).

Past SCM Research

In its early phase, the SCM was applied in competitive youth sport domains such as softball and baseball (Scanlan et al., 1993), football, soccer and volleyball (Carpenter et al., 1993), cricket (Carpenter & Coleman, 1998), and tennis (Weiss et al., 2001). Further use of the SCM examined adult participants in exercise/fitness area (Alexandris, Zahariadis, Tsorbatzoudis, & Grouios, 2002), tennis players (Casper et al, 2007), windsurfers (Jeon & Ridinger, 2009), triathletes (Crocker & Augaitis, 2010), and masters swimmers (Young & Medic, 2011). Examination of the results from previous SCM studies shows that antecedents predicting commitment adult participants compared to youth participants vary. For example, studies showed enjoyment is the primary predictor of sport commitment within the youth whereas involvement opportunities are reported as the most significant predictor of sport commitment in adults (Alexandris et al., 2002; Casper et al, 2007; Jeon & Ridinger, 2009). Additionally past research has found that the latent predictors of sport commitment significantly differ based on sport type (e.g., recreational versus competitive sport). For example, Casper and Andrew (2008) revealed different significant predictors of tennis commitment between recreational players and college athletes. The study found that the collegiate athletes reported lower sport enjoyment levels, but higher levels of involvement opportunities and social constraints, than recreational players. Casper and Babkes-Stellino (2008) found significant differences predicting commitment based on age and gender. For example, among four age-groups the two youngest groups reported significantly higher involvement alternatives and social constraints than the other two groups, and female participants indicated higher levels of enjoyment and personal investment while males reported higher levels of social support. The findings of these studies are meaningful because in terms of significant predictors of commitment there are differences, in particular age in the same sport.

The differences between youth and adult sport participants may be illuminated by studying both groups in the same sport context. The SCM has examined various adult and youth sport participants separately. However, a thorough literature search has found no research on adult and youth who participate in an identical sport.

Taekwondo

The sport of Taekwondo (TKD) is a popular global sport with an estimated 80 million participants (WTF, 2015) and serves as an ideal sport to investigate commitment since it is popular with both youth and adults (Kim, Zhang, & Ko, 2009). Previous studies have found that regular TKD participation can provide physiological (e.g., aerobic capacity, body composition, and flexibility) and psychological health benefits (e.g., life satisfaction, behavioral and social improvements) (Byeon, Kwon, & Park,

2008; Fong & Na, 2011; Kim, Dattilo, & Heo 2011; Lakes, 2013; Lakes et al., 2013). Motives for participating in TKD with youth include skill mastery, the uniqueness of the sport, fun, and physical benefits (Zeng, Cynarski, Baatz, & Park, 2015), while adults have reported self-realization and health benefits as primary motives (Ko, Seok, & Kwon, 2013).

Studying TKD has industry relevance as well since the sport suffers from poor retention of participants. For example, a number of youth drop their participation right after achieving Black-Belt status (Kang, 2004) and decreasing participation has been observed over the past decade with adult participants (Kim et al., 2009; Sport Business Research Network, 2014). Due to decreasing adult participation and poor retention of youth, TKD can be seen as a representative sport to understand commitment at all age levels. Thus, this serves as a seminal study to further academic theory on SCM by examining psychological commitment of two age groups while having practical needs within the industry. Furthermore, the findings may provide valuable information to other amateur and recreation sports faced with similar challenges.

Purpose

This study examines TKD commitment through the use of the SCM (Scanlan, Carpenter, Schmidt, et al., 1993). The purpose of this study is to investigate adults and youth participating in an identical sport, Taekwondo, to understand what key differences (or similarities) are predictive of commitment to the sport.

Method

Participants and Procedure

This study was approved by the Institutional Review Board at the researchers' university. Children under 18 years old were required to have the parental permission form completed on the front page of the survey and children under 10 years old were asked to have parents help with reading the questions to ensure comprehension. Adults in the TKD classes were asked to participate in the survey. However, their participation was completely voluntary. Participants for this study were recruited from four TKD studios in the Southeastern United States. Studio members were given the survey at the end of each group lesson and instructors encouraged the members to complete and drop off the questionnaire before they left the building. Each studio was given one week to distribute the surveys to their membership. To encourage participation, each studio provided an incentive (a uniform) as part of a random drawing if survey participants provided their e-mail address at the end of the survey. A total of 700 surveys (based on estimate of number of members) were distributed at the four studios and 434 surveys were collected one week later (response rate = 62%). Missing values analysis identified three surveys that had over 10% of the data missing and were omitted (Allison, 2001), leaving 432 surveys

for further analysis. Full descriptive statistics and frequencies are shown in Table 1. Youth were coded as respondents who indicated their age was 18 or younger; while adults were coded as those that were 19 and older.

Instrument

The questionnaire included categorical demographic and behavior items that pertained to gender, gross household income, race, and past participation in TKD (see Table 1). The SCM items were formulated based on previous SCM research on both adult and youth sport participants (e.g., Casper et al., 2007; Scanlan et al., 1993). The questionnaire was pilot tested for clarity, understanding, and time to complete with four youth (ages 8-14 years) and four adults. No changes were made based on feedback and the survey took less than 10 minutes.

Each of the six predictor variables in the study consisted of three items serving as observed variables of the underlying construct while TKD commitment included four items. The selected items for this study, and previous studies before, have been consistent and modifications have only been made to adjust for the activity under study (e.g., playing tennis versus playing soccer). Previous research has found that the constructs are internally reliable (e.g., Cronbach alpha > .70) and valid (e.g., standardized factor loadings > .50) (Hair, Black, Babin, Anderson, & Tatham, 2006). The model has also been shown to be valid in a variety of sport contexts such as adult fitness participation (Alexandris et al., 2002), adult tennis (Casper et al., 2007) and windsurfer participants, (Jeon & Ridinger, 2009), and in multiple youth sports (Scanlan, Carpenter, Schmidt, et al., 1993; Weiss et al., 2001). Item responses were based on a 5-point Likert-type scale that differed depending on the question (e.g., "none/not at all" to "very much/a lot") for this study.

Data Analysis

The first step was a descriptive analysis and an examination of the data for normality (i.e., Skewness and Kurtosis). With 95% confidence interval the critical value (<+/-2.0) for skewness and (<+/-3.0) for kurtosis were applied (George & Mallerey, 2010; Tabachnick & Fiddell, 2001).

The second step was to conduct a Confirmatory Factor Analysis (CFA) through a measurement model to examine each latent construct (e.g., commitment, enjoyment, involvement alternatives, involvement opportunities, personal investments, social constraints, and social support) based on factor structure, measurement model fit statistics, construct reliability (CR) and average variance extracted (AVE). Due to the purpose of this study examining adults and youth, measurement invariance testing between the groups CFA model was conducted. The last step consisted of conducting a multiple-group (youth and adult) path analysis of

structural model to examine conceptual connections between latent variables. While testing the models, the following fit indices were used: Comparative Fit Index (CFI), Tucker-Lewis Fit Index (TLI), and Root Mean Square Error of Approximation (RMSEA). According to Hu and Bentler (1999), fit index values of CFI and TLI above .90 and RMSEA values less than .05 are considered acceptable. Expanded details for each step are provided in the following section.

Results

Skewness and kurtosis values of the items, except three, were in an appropriate range. The three items (related to enjoyment) were found to be slightly negative from -2.2 to -2.5 for skewness and from 5.3 to 7.5 for kurtosis. However, these three items were retained as there was variability, the values were not very high, and sample size has an effect on the slightly high values of skewness and kurtosis (SPC for Excel, 2016)

CFA assessed reliability and validity of the constructs based on factor structure, measurement model fit statistics, composite reliability (CR), and average variance extracted (AVE) (Garson, 2013; Hu & Bentler, 1999). CFA analysis revealed that the standardized factor loadings of two items of involvement alternatives and one involvement opportunity were below .50. After removing these three items CFA analysis was conducted and presented acceptable model fit [($\chi 2$ = 467.75 (df = 168), CFI = .94, NFI= .91, TLI= .92, RMSEA= .06)]. All standardized factor loadings of 21 items were acceptable (from .56 to .89) and the values of reliability coefficients and average variance extracted indicted that the constructs were reliable and valid (Hu & Bentler, 1999). Table 2 presents standardized factor loadings of 21 items, and composite reliabilities (CR) and average variance explained (AVE) of seven variables.

Measurement invariance test was conducted to ensure measurement model validity for both youth and adults. The chi-square difference test rejected the null hypothesis that two groups are not significantly different, $\chi 2$ (22)=110.7, p < .01. However, the chi-square test is sensitive to sample size such as rejecting a reasonable model due to the large sample size (Meade, 2005). Thus, other types of goodness of model fit were evaluated. The results presented an acceptable model fit ($\chi 2$ = 705.685 (df = 336), $\chi 2/df$ = 2.100, RMSEA = .051, CFI = .926, TLI = .907, PCFI = .741). This indicates that the items underling the construct have similar meaning for youth and adult participants.

The results of a multiple-group path and indirect mediation analyses are reported in Table 3 and 4. For the adults, among the six predictor variables, enjoyment, personal investment, and involvement opportunities were significant positive predictors of TKD commitment. However, involvement alternatives were a negative predictor of enjoyment and TKD commitment. Social

constraints were a negative predictor of enjoyment only.

For the youth sample, the results indicated that enjoyment, involvement opportunities, personal investment, and social support were significant positive predictors of TKD commitment while involvement alternatives were negative predictors of enjoyment.

Discussion

This study examined the SCM with adult and youth TKD participants by examining the six predictor variables for their TKD commitment. This was the first study to test the SCM with adult and youth participating in an identical sport. Thus, the findings of this study add to SCM theory and may provide valuable information to inform marketing strategies for both age segments. The discussion section will highlight similarities and differences as well as practical implications.

Theoretical Implications

As this is the first study to use a cross-sectional design capturing adults and youth, there are several theoretical implications. First this study provides evidence that there are commonalities within the SCM that may be core predictors of commitment, and indirectly enjoyment, to the activity no matter developmental age. The finding of commonalties lends to practical marketing implications where marketing or communication efforts can be suited to target all age levels. Inversely, differences help identify a unique way to communicate and market based on age level that add unique points of difference and add value to participating in the activity. While past research has shown similarities and differences in SCM predictors between two age groups (e.g., college and adults tennis players; Casper & Andrew, 2008), it was unknown whether the findings were due to the sample and setting differences. Therefore, this study provided evidence that testing the SCM based on age within the same activity is warranted.

The findings of this study show that the SCM is a valid measure to use when comparing age differences. As part of the results, invariance testing found that adults and youth interpret the items of the SCM similar. While the level of importance for each item may differ, the underlying meanings and interpretation of the measures does not. Further, our study along with other more recent studies (Crocker & Augaitis, 2010) shows that there are clear common predictors (enjoyment and involvement opportunities) that explain a large majority of the variance of commitment. Additionally, since we looked at indirect effect with enjoyment as a mediator, variables that were not significant in predicting commitment can help in understanding participant's enjoyment of the activity. The results confirm the findings of Casper et al. (2007), and Weiss et al. (2001).

Similarities

Among the six predictor variables involvement opportunities, personal investments, and enjoyment were significant predictors of TKD commitment.

Involvement opportunities. A main factor related to TKD commitment is the unique (sport specific) opportunities that participation affords. This finding is consistent with previous SCM studies. For example, the results of studies examining tennis participants (Casper et al., 2007) and windsurfers (Jeon & Ridinger, 2009) indicated that involvement opportunities were the strongest predictor of commitment of adult participants. Even though many previous SCM studies with youth showed enjoyment was the strongest predictor of commitment, involvement opportunities were often the second strongest predictor of commitment (Scanlan, Simons, Carpenter, et al., 1993; Weiss et al., 2001). The involvement opportunities associated with TKD may be a key reason for TKD's popularity worldwide. It is one of the few activities where participants are encouraged to kick, scream and even break objects. Recognizing this, TKD practitioners have developed training methods to increase self-confidence and emotional release (e.g., breaking boards, practicing TKD demonstration, and exercising TKD formation) while still holding the original elements of ancient martial arts (e.g., self-defense skills). These opportunities are only realized during participation and therefore the strong relationship with commitment exists.

Enjoyment. Consistent with past theory and research, it is not surprising that enjoyment was one of the largest significant predictors of commitment for both youth and adults. The TKD participants that have fun and enjoy the activity are committed. This study adds more evidence to the importance of enjoyment in a variety of sport settings and among all age groups.

Personal investments. While not as strong as involvement opportunities and enjoyment, personal investments were a significant variable of TKD commitment for both adults and youth and this finding is consistent with previous SCM research (Alexandris et al., 2002; Casper et al., 2007; Scanlan, Simons, Carpenter, et al., 1993). Personal investments included monetary and non-monetary (e.g., time) elements. Compared with other recreational sports, participation in TKD requires a significant financial investment such as monthly fees, equipment purchase, testing fees, etc. TKD has a well-organized belt system and requires students to participate for a certain period and take a test to move up the next level. Moreover, it takes at least three years to achieve Black-Belt status. If the goal is to achieve a Black-Belt, each TKD participant must invest resources that are lost if the participant withdraws. In fact, the investment model (Rusbult, 1988), that is a foundation theory for the SCM, stated that more contribution (e.g., time and energy) should build higher commitment. Thus this

study demonstrates Rusbult's (1988) assertion in both age categories.

Differences

The results for predicting commitment found involvement alternatives as a significant predictor of TKD commitment for adults only, while social support was a significant predictor of TKD commitment for youth only.

Involvement alternatives. Within the SCM, involvement alternatives are the detractor of commitment. This study showed that involvement alternatives were a significant detractor of TKD commitment for adults, but not for youth. This is a key finding since social support was important for youth and not for adults. Adult continued involvement in TKD may depend on their perception of other viable alternatives. To retain adult participants, TKD must be viewed as better than other activities and the unique aspects of the sport must be viewed as superior to other participation options. This finding has multiple implications for TKD studios where they must compete with other leisure-time activities for the adult participation market.

Social support. Past SCM research examining youth found social support to be a weak or non-significant influence on commitment (Casper et al, 2007; Weiss et al., 2001). This study found social support to be significant for youth. It may be interpreted that the significant role of social support is based on the sport itself. TKD's educational philosophy teaches the importance of friendships and collaboration (e.g., youth TKD demo team providing mass formation show). Classes/lessons are primarily in groups and relationships develop over time. Thus, the youth, in this study, perceived the existing social relationships were important and therefore increased their commitment to the sport. Social support reflects feelings of encouragement and support that a sport participant receives from significant others (i.e., family and friends). According to Lantz (2002), parents serve as the primary reasons for youth involvement and their support is important for continued participation. Social support was rated to be important to the adults respondents ($M = 3.69$), but the variable did not statistically significant predict for TKD commitment, so while participants may view that their participation is viewed positively by significant others, it is not related to commitment to the sport. For adults, participation may be more for purposes such as exercise/fitness and self-defense/fighting and continued participation is not dependent on others.

Indirect impact (enjoyment as a mediator)

For both age groups, involvement opportunities and personal investments had a positive influence on enjoyment while involvement alternatives were a significant negative predictor of enjoyment. Similarly to predicting commitment, involvement

opportunities were a primary predictor of enjoyment for both adults and youth. The influence of personal investments and involvement alternatives was stronger for adults. For involvement alternatives, adults might have more participation options than youth and these, of course, detract from TKD enjoyment. This finding corresponds with past SCM studies with adults that examined the influence of predictor variables on enjoyment (Casper et al., 2007). For personal investments, youth may devote the same amount of time and effort as adults. However, this study indicated pecuniary investments such as monthly fees and testing fees had a lower influence for youth than for adults. This finding may result from parents being the primary monetary resource for youth participants. The findings indicated that social support and social constraints did not predict enjoyment for youth and social constraints were a weak detractor of enjoyment for adults. This finding is interesting as it shows that the social influences that keep one committed did not necessarily make the TKD participation more fun. Youth in this study may continue to participate in TKD because of significant others; however, other variables (e.g., involvement opportunities) are more important and provide unique fun experiences (e.g., hitting and kicking) and heuristic outcomes.

Implications

This study highlights that within the same activity, two age segments are committed to the sport for similar and dissimilar reasons. First related to the similarities, retention efforts can be generalized if they relate to the commonalties of the findings. For example, involvement opportunities were strong predictor variables for adults and youth. Thus, TKD programs that emphasize distinct experiences that can be obtained only through TKD (e.g., hitting, kicking, breaking boards, screaming, etc.) can encourage adult and youth participants' retention. Another similarity was that personal investments had an important influence on commitment. Continuing investments (e.g., time and money) may be driven by strong goals for TKD participants. In fact, since TKD holds both characteristics as modernized sport activity and ancient martial arts, participants have diverse goals such as competition, fitness, self-defense, fun, etc. (Kim & Zhang, 2015). As these may be the primary elements that lead to continuing personal investments, managers and instructors might need to clearly understand participants' personal goals and try to apply different teaching methods based on those goals. Implications related to enjoyment suggest keeping the sport fun. Thus, programming that emphasizes fun activities should be implemented such as weapons training (e.g., a wooden sword and a stick weapon) and action movie stunts help with enjoyment of the sport.

The differences between adults and youth suggest age dependent retention

efforts, as well. First, since social support was significant for youth, strategies related to developing social bonds (e.g., birthday party, demo team, etc.) and incentivizing students to recruit friends to join a studio may be effective tactics.

Limitations and future research

One major limitation is that while we were comparing age groups, the age range for each category was very broad (under and over 18 years old). It is well documented, and recognized by the authors, that the psychological determinants with each category can be very different (e.g., adolescent versus teenager). The same may apply for a young adult versus older adult. While further segmentation of age is warranted, these age categories were used based on the programming offered in TKD. While our study examined active participants, future research with non-participants is warranted, especially related to recruitment of new TKD participants. Also, even though we surveyed four TKD studios, all four were located in the same region of the U.S. and all had similar programming and martial arts methods. Thus, subjects in this study may have similar perceptions regarding TKD instruction and programming. Additionally, we used a self-report survey and had many young respondents whose parents were responsible for survey interpretation. Therefore, more caution might be used when interpreting the findings of youth participants.

Future research may continue this line of research with other sports or leisure activities. For example soccer, in the form of leagues, is a popular adult recreational sport and it would be interesting to see if our results are replicated in other sports with a wide age range. Future research should look at further segmentation. For example, Casper and Babkes-Stellino (2008) found differences in predictors of commitment with participants playing the same sport based on demographic variables. The SCM in this study included six predictor variables of commitment. However, it could be possible there are other variables that might be important for commitment such as participants' skill level and ability (perceived competence). Finally, the SCM focuses on participants continued involvement. Therefore, a longitudinal study with the SCM might provide better understanding for sport participants. Examining the participants' reasons for continued participation or withdrawal may provide researchers and practitioners a better understanding about what other variables influence sport participation and retention.

Conclusion

Past research with the SCM has found that the predictors of commitment may be both activity and socio-demographic dependent. This study examined TKD to establish how the SCM differs or is similar based on two age categories. Specifically we found that enjoyment, involvement

opportunities and personal investments were important for commitment in adult and youth participants while other predictor variables differed between the age segments. In summary, this study contributed to the growing research on sport commitment and demonstrated that the reasons for continued participation are unique based on developmental age. Additionally, specific similarities and differences inform decisions related to practical implications focusing on retention of participants to TKD providers.

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Tables

Table 1

Descriptive statistics of the sample

Variables	Adult		Youth	
	N	*M*	*N*	*M*
Age	205	38.1	227	10.9
Visit Time (per week)		3.07		3.17
	Adult		Youth	
Variables	*N*	*%*	*N*	*%*
Years of Participation				
Under 1 year	59	29.5	86	38.6
1 - 2 years	56	28.0	39	17.5
3 - 4 years	39	19.5	55	24.7
5 years or more	46	23.0	43	19.3
Gender				
Male	109	52.9	154	67.8
Female	96	47.1	73	32.2
Race				
Caucasian	148	72.2	124	55.6
African American	18	8.8	22	9.9
Asian	23	11.2	41	18.4
Native Hawaiian / Pacific Islander	0	0	3	1.3
Hispanic / Latino	7	3.4	13	5.8
Multi-ethnic / Mixed race	7	2.4	16	7.2
Other	2	1	4	1.8
Income (only adult)				
under $24,000	18	9.3		
$24,001 - $40,000	19	9.8		
$40,001 - $65,000	29	15.0		
$65,001 - $95,000	41	21.2		
$95,001 - $120,000	28	14.5		
$120,001 or more	58	30.1		

Table 2

Factor loadings, Reliability coefficients, and Average variance extracted

Factors	Items		λ	α	AVE
TKD Commitment	COM1	I am determined to get to the next belt level.	.622	.807	.514
	COM2	How determined are you to continue Taekwondo?	.850		
	COM3	How hard would it be for you to quit Taekwondo?	.728		
	COM4	How proud are you to tell other that you do Taekwondo?	.646		
TKD Enjoyment	ENJ1	I enjoy participating in Taekwondo.	.881	.878	.706
	ENJ2	I like Taekwondo.	.770		
	ENJ3	I have fun participating in Taekwondo.	.866		
Involvement Alternatives	IA3	Are you thinking of doing this activity instead of Taekwondo?	.866	.708	.556
	IA4	Is it difficult to choose Taekwondo over your chosen alternate activity?	.602		
Involvement Opportunities	IO1	I would miss being considered a Taekwondo athlete if I quit.	.733	.779	.548
	IO2	I would miss the unique experience of Taekwondo if I quit.	.881		
	IO4	I would miss the people that I have met if I quit Taekwondo.	.575		
Personal Investments	PI1	How much energy do you put into Taekwondo?	.817	.868	.687
	PI2	How much time do you put into Taekwondo?	.774		
	PI3	How much effort do you put into Taekwondo?	.892		
Social Constraints	SC1	I feel that I have to participate in Taekwondo to be with my friends.	.572	.701	.441
	SC2	I feel that I participate in Taekwondo so others do not feel that I am a quitter.	.704		
	SC3	I feel that I do Taekwondo more for other than for myself.	.707		
Social Support	SS1	People say things that make me feel good about participating in Taekwondo.	.560	.725	.472
	SS2	Significant others encourage me to do Taekwondo.	.702		
	SS3	I feel I receive support from significant others to do Taekwondo.	.780		

Table 3

Adult Standard Normali (NT) and Bootstrap Methods

Path	Estimate		95% Confidence Interval			
	β	*SE*	Bootstrap Percentile		Bootstrap with bias Corrections	
IA → TE	-.098**	.019	-.145	-.051	-.151	-.054
TE → TC	.341**	.081	.169	.506	.168	.505
IA → TC	-.048*	.024	-.097	.001	-.095	.003
IA → TE → TC	-.033**	.010	-.061	-.013	-.066	-.015
IO → TE	.290**	.027	.196	.386	.196	.386
TE → TC	.341**	.081	.169	.506	.168	.505
IO → TC	.400**	.039	.264	.562	.275	.577
IO → TE→ TC	.099**	.835	.042	.166	.044	.170
PI → TE	.253**	.028	.161	.341	.170	.350
PI → TC	.185**	.038	.081	.282	.085	.289
PI → TE → TC	.086**	.023	.037	.138	.044	.144
SC → TE	-.038*	.019	-.075	-.003	-.074	-.002
SC → TC	-.001	.022	-.042	.039	-.042	.040
SC → TE → TC	-.013*	.007	-.027	-.001	-.028	-.002
SS → TE	.020	.020	-.019	.062	-.018	.064
SS → TC	.032	.023	-.025	.091	-.028	.087
SS → TE → TC	.007	.007	-.007	.023	-.005	.027

Note. N = 205. NT = Baron-Kenny-Sobel method. Estimates are unstandardized. IA = Involvement Alternatives; IO = Involvement Opportunities; PI = Personal Investments; SC = Social Constraints; SS = Social Support; TE = Taekwondo Enjoyment; TC = Taekwondo Commitment.

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

Table 4

Youth Standard Normali (NT) and Bootstrap Methods

Path	Estimate		95% Confidence Interval			
	β	*SE*	Bootstrap Percentile		Bootstrap with bias Corrections	
IA → TE	-.071**	.025	-.122	-.019	-.123	-.022
TE → TC	.457**	.056	.305	.600	.323	.618
IA → TC	-.024	.021	-.066	.019	-.065	.019
IA → TE → TC	-.032**	.012	-.058	-.008	-.063	-.012
IO → TE	.490**	.036	.346	.621	.353	.625
TE → TC	.457**	.056	.305	.600	.323	.618
IO → TC	.387**	.040	.269	.503	.278	.514
IO → TE → TC	.224**	.032	.131	.322	.139	.340
PI → TE	.259**	.038	.140	.378	.135	.375
PI → TC	.096*	.035	-.005	.211	-.013	.201
PI → TE → TC	.008**	.023	.055	.191	.062	.199
SC → TE	-.041	.025	-.093	.006	-.092	.008
SC → TC	.026	.021	-.010	.058	-.007	.062
SC → TE → TC	-.019*	.012	-.043	.002	-.044	.002
SS → TE	.036	.031	-.039	.118	-.041	.116
SS → TC	.096**	.026	.036	.163	.031	.159
SS → TE → TC	.016	.014	-.019	.052	-.018	.052

Note. N = 205. NT = Baron-Kenny-Sobel method. Estimates are unstandardized. IA = Involvement Alternatives; IO = Involvement Opportunities; PI = Personal Investments; SC = Social Constraints; SS = Social Support; TE = Taekwondo Enjoyment; TC = Taekwondo Commitment.

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

Figure 1

Adult Direct and Indirect Path Analysis

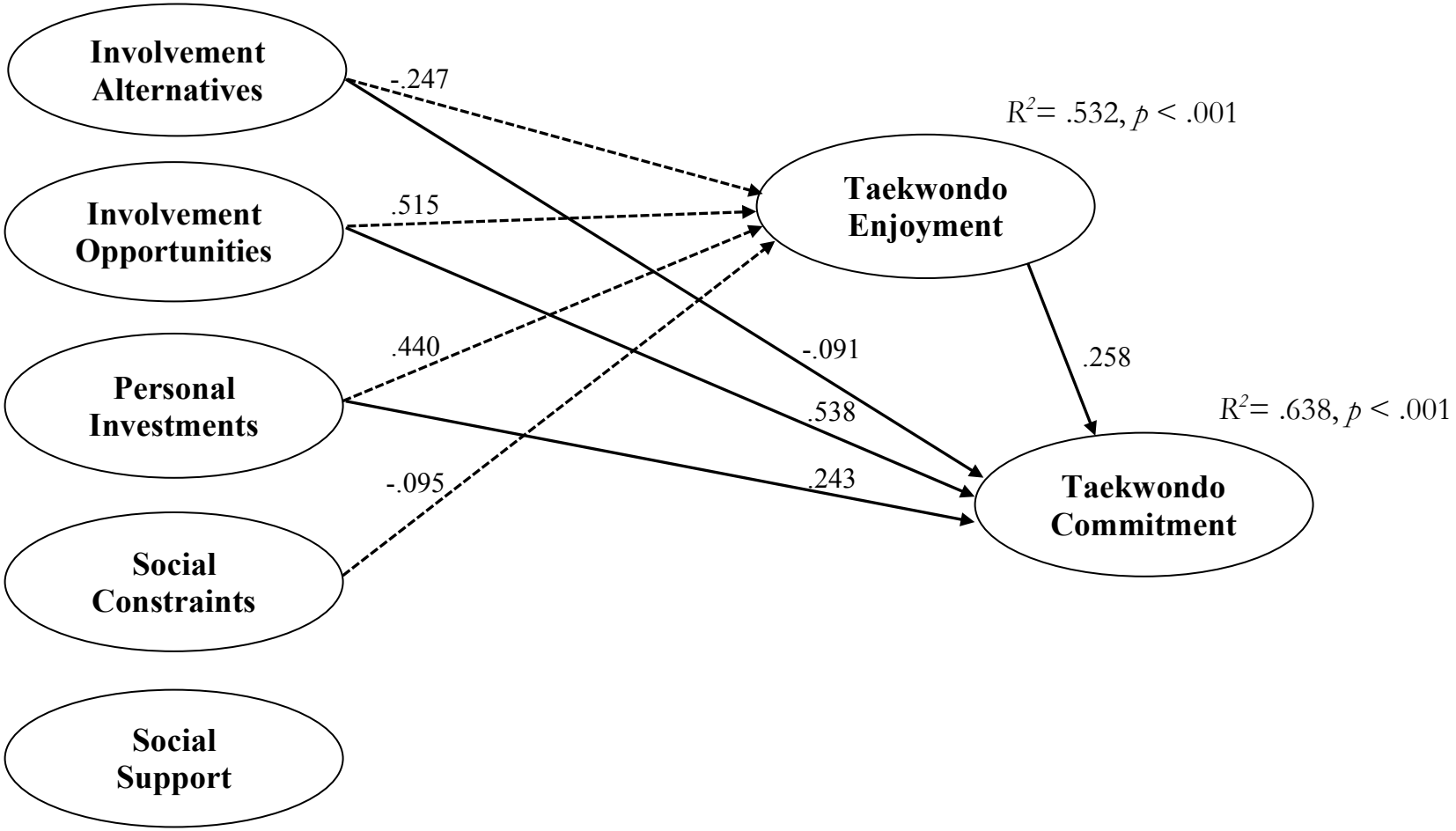

Figure 2

Youth Direct and Indirect Path Analysis