

Factors that Influence Career Decision Making Among Elite Athletes

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Abstract

A common belief about elite athletes is that they invest so much effort into the pursuit of their athletic careers that they fail to develop good career decision making skills. Recent findings challenge that belief. The present study investigated career decision making difficulties among 117 elite Australian athletes. Participants completed adapted versions of the Career Decision-Making Difficulties Questionnaire, the Athlete Identity Measurement Scale, the Career Decision Making Self-efficacy Short Form, and the Work Locus of Control Scale. These elite athletes showed no evidence of career making difficulties. Combinations of this set of variables accounted for 35% of the variance in decision status and 20% of the variance in career decision making difficulties. Career decision making self-efficacy was a major contributor in both instances. Internal locus of control was also identified as a desirable characteristic in the context of career decision making. The implications of these findings are discussed.

Factors that Influence Career Decision Making for Elite Athletes

In recent years, the career development of athletes has become an increasingly topical subject. Sport is now a major business and the career focus of many an aspiring young athlete. On a practical level, this interest has translated into a dramatic increase in the number of athlete career development programs around the world, such as the Athlete Career Education (ACE) programme here in Australia (Albion & Fogarty, 2003). To support these practical initiatives, there is a requirement for continued input from the research community on the theoretical constructs that shape career decision making processes. Hinkle identified this need when he called for the development of educational programs that not only assist athletes with performance but also career development and life planning (Hinkle, 1994, p. 54). Hinkle believed the delivery of sport psychology services would be greatly enhanced as a function of expanding the research base upon which it is founded, particularly in the areas of athletic self-concept, self-efficacy beliefs, and career life-planning.

Looking back on the intervening period, it seems that much of the career-related research on athletes has focused on career transition issues (e.g., Wyllerman, Alfermann, & Lavalley, 2004) with fewer empirical investigations into factors influencing the career exploration, planning, and decision making processes of early- or mid-career athletes. The difficulties faced by young athletes having to make substantial investments of time and energy into activities linked with very uncertain rewards do not attract the same attention. The present study addresses this weak area in the literature by exploring the role of demographic variables, self-efficacy, and locus of control on the career decision making difficulties experienced by a sample of elite Australian athletes who were part of the ACE programme. We begin by explaining the nature of career decision making difficulties and how they are measured.

Career Decision Making Difficulties

Early attempts at investigating career decision making difficulties had as their primary focus the development of a variety of measures geared at assessing indecision. Tinsley (1992) criticised these empirical attempts for being conducted independently of theory. In response to this criticism, Gati, Krausz, and Osipow (1996) drew upon classical decision theory to develop a taxonomy of difficulties encountered in career decision making. In order to test their model, they constructed and validated the Career Decision Making Difficulties Questionnaire (CDDQ). The components of the CDDQ give some insight into how Gati et al. conceptualised career decision making difficulties, so we will describe the instrument in detail.

The CDDQ comprises 44 statements that assess attitudes and beliefs regarding career decision making. Designed to assess the particular areas of difficulties individuals are facing in their career decision making, the 44 items cover three global first-order categories of difficulties, namely: Lack of Readiness to make a career decision, Lack of Information, and Inconsistent Information. Lack of Readiness, the first major difficulty category, pertains to the period preceding an individual's engagement in making a career decision and is further subdivided into the three difficulty categories of Lack of Motivation (3 items), Indecisiveness (4 items) and Dysfunctional Myths (3 items). Each of the other two major categories comprises categories of difficulties that arise during the career decision making process. The second category, Lack of Information, is subdivided to include the subscales of Lack of Knowledge about the process (3 items), Lack of Knowledge about the self (8 items), Lack of Knowledge about Occupations (4 items) and Lack of Knowledge about How to Access Additional Sources of Information (2 items). The final category,

Inconsistent Information, incorporates the categories of Unreliable information (6 items), Internal Conflicts (7 items), and External Conflicts (4 items). These 44 items can be summed to yield a score indicating the severity of difficulties facing an individual. The CDDQ also includes a number of introductory questions aimed at providing a general overview of level of career indecision, including questions regarding level of undecidedness, satisfaction with this decision status, and confidence in current choice. A measure of career decision status can be obtained from these questions.

Osipow and Gati (1998) reported that the CDDQ was correlated with the Career Decision Scale (Osipow, Carney, Winer, Yanico, & Koschier, 1976) and negatively correlated with the Career Decision making Self Efficacy Scale (Betz, Klein, & Taylor, 1996). In addition, the CDDQ was able to distinguish between decided and undecided students, providing evidence of its concurrent validity. In their analysis of the CDDQ, Albion and Fogarty (2002) reported a five-factor structure, including Lack of Motivation, Indecisiveness, Lack of Information, Internal Conflicts, and Conflicts with Others. Their analysis of the three items that preceded the CDDQ difficulty items revealed a single underlying factor, which they labelled Decision Status. Scores on scales derived from the five CDDQ difficulties factors predicted CDDQ Decision Status. In a second study, based this time on elite young athletes who were part of the ACE programme and non-athletes of comparable age, Albion and Fogarty (2005) reported that scores on the CDDQ Difficulties section were associated with scores on the Athletic Identity Measurement Scale (AIMS; Brewer, VanRaalte, & Linder, 1993) with high scorers on the AIMS more likely to experience career decision making difficulties. The CDDQ was judged to be the best available self-report measure for career indecision and was therefore used to provide the dependent variables in the current study. In the paragraphs that follow, we review constructs that are believed to be associated with career indecision.

Demographic Variables

Research investigating the relative contribution of demographic variables to career maturity and career decision status is equivocal (Patton & Creed, 2001). Following an investigation into the developmental differences in career decision status of Australian adolescents, Patton and Creed outlined the complexity of the relationship between age, gender and status, highlighting the need for these and other demographic factors to be explored further. The present study explored the relations between career decision making difficulties and gender, age, and number of hours spent participating in sport.

Athletic Identity

Murphy, Petitpas, and Brewer (1996) were among the first investigators to examine potential influences of career-related variables and constructs among athletes. Stimulated by an article in which Brewer et al. (1993) discussed the proposed consequences, both positive and negative, of exclusively identifying oneself as an athlete, these early attempts hypothesised that a strong athletic identity would be related to lower levels of career maturity. In support, Murphy et al. observed an inverse relationship between the self-identity variables of identity foreclosure and athletic identity, and the career maturity attitudes of 124 intercollegiate athletes. Significant effects were also observed for gender, playing status, and type of sport. More specifically, those athletes projected to be most likely at risk of not acquiring career decision making skills were 'male varsity student-athletes in revenue producing sports' (Murphy et al., p. 293).

Brown and Hartley (1998) found no relationship between athletic identity and decision making, world-of-work information, and knowledge of preferred occupational group. Subsequent studies (Brown et al., 2000; Kornspan & Etzel, 2001; Martens & Cox,

2001) also failed to support the proposed negative association between athletic identity and career maturity. Albion and Fogarty (2005) found a weak relationship between athletic identity and career decision making difficulties but reported that it was due to a small section of their sample of athletes. In fact, it was the same section identified by Murphy et al. (1993). In general, whilst the early literature suggests a negative relationship, more recent findings indicate that there is probably no relationship between identity and decision making. One possibility is that the growth of athlete career education programmes, such as ACE, has addressed what was formerly a deficiency in the career development of athletes. The present study will explore this research question further in a sample of elite Australian athletes.

Career Decision Making Self-Efficacy

Bandura (1986) referred to self-efficacy as the belief an individual holds regarding his or her ability to perform a certain task. Accordingly, career decision making self-efficacy (CDMSE) depicts the confidence one has in one's ability to perform the behaviours necessary for effective career decision making. One of the most popular measures of this construct is the Career Decision Making Self-Efficacy Scale Short-Form (CDMSE-SF) which measures an individual's degree of belief that he or she can successfully complete tasks considered as necessary in making career decisions (Betz, Klein, & Taylor, 1996).

Amongst the general population, self-efficacy beliefs have been implicated in both career maturity (Luzzo, 1995), career planning (Rogers, Creed, & Glendon, 2008), and individual levels of indecision (Taylor & Betz, 1983; Taylor & Pompa, 1990). Following a review of the literature on career maturity, career identity, and self-efficacy, Prideaux and Creed (2001) noted that the three have much in common and should be studied in unison. Working with a sample of athletes, Brown, Glastetter-Fender, and Shelton (2000) explored the relations between athletic identity, identity foreclosure, and the more narrowly defined constructs of career locus of control and career decision making self-efficacy. They found that hours of sport participation and external career locus of control were both associated with lower self-efficacy beliefs for making decisions regarding career-related tasks. One drawback to this study was the use of the Career Locus of Control Scale (CLCS; Trice, Haire, & Elliott, 1989), which yields a measure of external locus of control. For reasons that will become apparent in the next paragraph, we were interested in measuring internal as well as external locus of control.

Career Locus of Control

Locus of control (Rotter, 1996) refers to the extent to which people believe outcomes are dependent upon their own actions (internal orientation) or largely under the control of chance factors, powerful others, or the difficulty of the task (external orientation). Empirically, locus of control has been linked to a variety of career development activities and, in particular, to career decision with individuals showing an internal locus of control tending to demonstrate both higher levels of career maturity and lower levels of indecision (Carver, Scheier, & Weintraub, 1989; Hartman, Fuqua, & Blum, 1985). Working with students, Lease (2004) found that external locus of control (measured by CLCS) was related to career decision making difficulties (measured by CDDQ). In their investigation into the relationship between athletic identity, career decision making self-efficacy, career locus of control, and demographic variables amongst 259 junior college student-athletes, Kornspan and Etzel (2001) found that career self-efficacy and career locus of control, and not athletic identity, were the most important predictors of career maturity. Luzzo (1997)

also reported that external locus of control (measured by CLCS) was negatively associated with career decision making self-efficacy (measured by CDMSE-SF).

Research Aims

Much of the research on career decision making in athletes is clouded by contradictory findings. As Patton and Creed (2001) asserted, there are many complex interactions in this area. Do athletes have more trouble making career related decisions? The answer may well depend on the nature of the athletic population being studied, the presence of demographic variables that can act as moderators, and psychological variables that interact to produce effects that are not replicated in other studies. The aim of the present study was to examine the effects of the demographic variables gender, age, level of participation, hours of sport participation per week and the psychological variables athletic identity, career decision making self-efficacy, and career locus of control on decision making difficulties in a sample of elite athletes. By choosing an elite athlete population we were able to exert some control over such factors as level of commitment and level of achievement and by adopting a multivariate framework, we hoped to be able to judge the relative contribution of these variables, all three of which have been identified in the literature as related to career decision making. A further aim of this study was to examine the influence of internal, as well as external, locus of control.

Method

Participants.

Participants in this study included 117 athletes (51 males and 66 females) affiliated with the Western Australian Institute of Sport (WAIS) in Perth ($N = 70$) and the Queensland Academy of Sport (QAS) in Brisbane ($N = 47$). The average age of participants was 21 years ($SD = 5.0$) with the number of hours participants spent training ranging from 10 to 20 hours per week ($M = 17.59$). Participants came from 30 sports with the greatest representation coming from the sports of netball ($N = 14$), athletics ($N = 11$), golf ($N = 11$), swimming ($N = 9$) and triathlon ($N = 9$). The majority of athletes ($N = 69$, 60%) reported having represented their country at international level.

Measures

Demographic Variables. Athletes were asked to provide information regarding age, gender, the age at which they began the sport they are involved in, the number of hours they devote to this sport on a weekly basis, the highest sporting level they have attained, and the number of years they have competed at this level.

Career Decision Difficulties Questionnaire (CDDQ). The 44-item CDDQ (Gati et al., 1996) was described earlier. In their analysis of the factor structure of the CDDQ, Albion and Fogarty (2002) reported five first-order factors, as opposed to three higher-order factors and various second-order categories reported by Gati et al. (1996). An abbreviated version of the CDDQ was developed for the purposes of this study. The intention was to retain sufficient items to capture the five factors identified by Albion and Fogarty. The resulting 18-item scale used the same CDDQ 9-point Likert type scale, ranging from 1 (*Does not describe me*) to 9 (*Describes me well*). A high score on this scale indicates that the individual is having trouble making career related decisions. The three items relating to decision status were also included. To form a scale from these three factors, it was necessary to reverse the scoring of the first question which, in its original form, indicated *undecidedness*. To avoid confusion in this paper, we will call the first of these scores (based on the 18 items) CDDQ Difficulties and the second score (based on three items) CDDQ Decision Status.

Career Decision Making Self-Efficacy Scale Short-Form (CDMSE-SF). The 25-item CDMSE-SF measures an individual's degree of belief that he or she can successfully complete tasks considered as necessary in making career decisions (Betz et al., 1996). Respondents are asked to consider tasks and indicate on a five-point Likert-type scale the extent to which they have confidence in their ability to perform these tasks, circling "1" if they have no confidence at all, through to "5" if they have complete confidence. The CDMSE-SF has a high internal consistency reliability of .94 and is correlated with criterion measures of career indecision and vocational identity (Betz, 2001). Given that the CDMSE-SF is generally treated as a unidimensional measure (Prideaux & Creed, 2001), we also reduced it to just 10 items.

Work Locus of Control Scale (WLCS). The WLCS (Spector, 1988) measures the extent to which individuals attribute success and failure to their own efforts (internal locus of control) or external factors (external locus of control). The 16 items are set in an organisational context and use a six-point scale anchored by *Strongly Disagree* and *Strongly Agree*. Respondents are asked to mark the point along the scale that they believe best describes them. The WLCS is balanced by equal numbers of externally and internally worded items. Macan and Trusty (1996) reported that the WLCS consists of two dimensions, namely, internality and externality, and they advised users of the scale to compute separate subscales. They demonstrated reliability coefficients for the WLCS ranging from .72 to .86 for the internal subscale and .85 to .87 for the external subscale. The fact that separate scales could be obtained made this a better choice of instrument for the present study than the unidimensional CLCS (Trice et al., 1989). Again, minor adaptations were made to the wording of items to suit the current context. The two measures obtained from this scale were labelled LOC-INT and LOC-EXT respectively.

Athletic Identity Measurement Scale (AIMS). The AIMS (Brewer et al., 1993) is a self-report measure designed to assess both the strength and exclusivity of identification with the athlete role. Respondents are asked to indicate on a seven-point scale the extent to which they agree or disagree with each of the 10 statements included in the inventory. A high score indicates high athletic identity. Brewer et al. (1993) reported that the AIMS has an internal consistency reliability coefficient of .93. Test-retest reliability, following a two-week interval, was reported to be .89, with AIMS scores positively correlating with measures of both sport importance and sport orientation.

Procedure

In preparation for the data collection phase, an explanatory proposal outlining the nature of the study and its requirements was sent out to the Western Australian Institute of Sport and the Queensland Academy of Sport. As an incentive to participate, athletes were offered individual written feedback regarding their current career status with respect to CDM, the nature of their CDM difficulties, and confidence in their ability to make career decisions. To aid returns, all surveys included a pre-addressed reply-paid envelope addressed to the researchers at the University of Southern Queensland.

The study was approved by the Human Research Ethics Committee at the University of Southern Queensland. Prior to commencement of the study, the participants were provided with an information sheet about the purposes and procedures of the study and requested to complete a consent form should they agree to participate. If the participants were under the age of 18 years, they were asked to have their parent/guardian sign the

consent form on their behalf. The questionnaire took approximately 15-20 minutes to complete.

Statistical Analysis

Because many of the instruments were modified for the present study, to determine the underlying factorial structure of the questionnaire all sections were subjected to Principal Axis exploratory factor analysis. Scree plots were used to assess the number of factors and oblique rotation methods (oblimin) were employed. Pearson Product Moment correlations and multiple regression techniques were used to explore relations among the variables.

Results

The data were screened through the Statistical Package for the Social Sciences (SPSS) for accuracy of data entry, missing values, and fit between the distributions and assumptions required for inferential statistics. The Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett test of sphericity were used to test the factorability of the correlation matrices. The results were within acceptable limits for all scales.

The factor analysis of the 18-item CDDQ yielded four correlated factors, which were labelled as Lack of Information, Lack of Motivation, Indecisiveness, and Conflicts. In the shortened version of the scale used in the present study, the Internal Conflicts and Conflicts with Others factors obtained by Albion and Fogarty (2002) merged to form a single factor. Although a four-factor solution represented an acceptable solution, the dominance of the first eigenvalue (accounting for 40% of the variance) of this shortened version of the CDDQ pointed toward a single difficulties factor representative of the general difficulties experienced by athletes when making career related decisions. We decided to use a scale based on this single factor in subsequent analyses. The scale, which we called CDDQ Difficulties, was formed by summing the items. The three introductory items that prefaced the 18 items of the CDDQ were analysed separately. Exploratory factor analysis supported a unidimensional structure. After reversing the scoring of the decision status item so that was scored in a positive direction, the three items were summed to form a variable called CDDQ Decision Status.

Factor analysis of the adapted form of the CDSME yielded two correlated factors. However, internal consistency reliability (Cronbach's alpha) was highest if the scale was treated as unidimensional, so subsequent analyses are based on the general career decision making self-efficacy scale. The Locus of Control scale separated neatly into two uncorrelated factors with all items loading in accordance with expectations. Although the authors of the AIMS now favour a three-factor solution (Brewer & Cornelius, 2002), it was very clear that the AIMS was unidimensional in the present data.

Descriptive Statistics

Having described the statistical rationale for treating the constructs of CDDQ Decision Status, CDDQ Difficulties, Athletic Identity, and Career Decision Making Self-Efficacy as unidimensional and Locus of Control as comprising two factors, the next step involved summing the items to yield a total score for each of the scales. Results of these analyses are presented in Table 1. To facilitate comparisons with other studies that have used differing numbers of items in the scales, the average score per item is reported for each scale.

Insert Table 1 about here

Overall, the athletes in the present study were satisfied with their career decision status with a mean score of 7.05 out of a possible 9.0 on this three-item scale. The average scores for the CDDQ obtained by the athletes in this sample ($M = 3.35$, $SD = 1.59$) were similar to those reported by Gati et al. (1996) for American ($M = 3.60$, $SD = 1.32$) and Israeli ($M = 3.49$, $SD = 1.36$) students and pointed toward relatively low levels of difficulties, given that the maximum possible score per item was nine. The CDDQ scores were also similar to those reported by Albion and Fogarty (2002) for a mixed sample of Australian adults and high school children and almost identical to what they observed working with a much larger sample ($N > 800$) of Australian athletes (Albion & Fogarty, 2003). The mean CDMSE score was 3.74 out of a possible 5.0, suggesting that these elite athletes felt moderately confident in their ability to make career related decisions. These means are higher than those previously reported for student-athletes ($M = 3.3$) but similar to those reported by Betz et al. (1996) for college males ($M = 3.6$) and females ($M = 3.56$).

Athletes recorded a reasonably high mean score on the internal locus of control scale ($M = 4.95 = 71\%$) and a low score on external locus of control ($M = 2.52 = 36\%$). Regarding the AIMS, this athletic sample had mean of 4.87, which is not a lot higher than the midpoint for the scale (4.00), suggesting that there was little evidence of identity foreclosure. This figure is almost identical to that reported by Albion and Fogarty (2003).

Relations Among Scales

The correlation matrix showing the relationships among the variables is presented in Table 2.

Insert Table 2 about here

The pattern of correlations shown in Table 2 was in accordance with expectations. We will defer discussion of individual relations except to note here that only two of these variables correlated with CDDQ Decision Status whereas three variables correlated with CDDQ Decision Difficulties. We also note that the two locus of control variables were not correlated, justifying their inclusion as separate variables. They exhibit different patterns of relations.

One of the main aims of the study was to assess the relative contribution of these demographic and dispositional variables to career decision making. Accordingly, the two decision outcome variables (CDDQ Decision Status and CDDQ Difficulties) were regressed onto the independent variables shown in Table 2. When predicting CDDQ Decision Status, we used hierarchical regression to separate the contribution of CDDQ Difficulties because it is a measure taken from the same instrument as the outcome variable. To conserve space, we have not shown the results for the demographic variables - age, gender, and participation - which made no contribution.

Insert Table 3 about here

It can be seen that the equation accounted for 35% of the variance in Decision Status with the strongest predictors CDSME and the CDDQ Difficulties. In the next regression analysis, CDDQ Difficulties is the dependent variable and CDDQ Decision Status is omitted.

Insert Table 4 about here

The only variable that made a contribution to the prediction of Decision Difficulties ($R^2 = .21$) was Career Decision Making Self-Efficacy.

Discussion

The main aim of this study was to investigate relations among the constructs of career decision-making difficulties, career decision status, and the dispositional variables of athletic identity, career locus of control, and career decision-making self-efficacy. Before discussing these relations, however, we will comment briefly on some broader trends emerging from this study. Hinkle (1994) suggested that as a function of the extensive commitment required for participation in sport that athletes are a population at-risk for career-development deficiencies. The first point to note about the data reported in Table 1 is that, by comparing these figures with those reported in other studies, there is no evidence that athletes differ from the rest of population in terms of career indecision. Nor do we find evidence in a much larger sample of elite athletes (Albion & Fogarty, 2003). There may be sub-groups within this population that do exhibit this tendency (Albion & Fogarty, 2005; Murphy et al., 1996), but it seems that it is a description that can no longer be applied to the population of athletes. Historically, a lack of direct career support and guidance is one possible reason for previous reports that athletes score lower than students on career decision-making self-efficacy (Brown et al., 2000) and career development (Martens & Cox, 2000). The advent of athlete career education programmes such as ACE and the widespread implementation of these programmes is almost certainly one of the reasons for the improvement (Albion & Fogarty, 2003).

Turning to the main research questions of this study, to assist the discussion of the large number of relations observed (see Table 2), we will take each variable in turn and discuss the findings for that variable. In relation to gender, where males were coded as '1' and females as '2', we found that females were more likely to be older, to spend less time training for sport and participating in sport, to have lower career decision making self-efficacy, and were less likely to attribute success in sport to factors such as luck. In contrast to previous findings identifying male athletes as more at risk (Brewer et al., 1993; Matheson, Brewer, Van Raalte, & Anderson, 1994), the present study found no relationship between gender and career decision making difficulties or decision status. Furthermore, the finding that these female athletes scored lower than their male equivalents on career decision making self-efficacy is at odds with reports that there are usually no differences, or even differences in favour of females (see review by Scott & Ciani, 2008). The finding is more puzzling when one considers evidence from this study that there are no differences between males and females regarding career decision making difficulties or career decision status. The answer may well lie in the domain being investigated. Bandura (2006) pointed out that females have higher self-efficacy in some career fields (e.g., health care) and males higher self-efficacy in others (e.g., science and technology). It may be that the notion of careers in sport is still unfamiliar to female athletes and consequently they feel less capable of making well-informed career choices.

In relation to age, we found that younger athletes were more likely to experience career decision making difficulties. Although the CDDQ was treated as a unidimensional measure in this study, root one criterion also supported a four-factor solution with factors corresponding to Lack of Motivation, Decisiveness, Lack of Information, and Conflicts. Post-hoc analyses revealed that the relationship between age and difficulties was due entirely to the Lack of Information items. We will return to this issue in the recommendations section of the paper.

The number of hours devoted to sports participation (including training) was positively associated with internal locus of control and athletic identity. We are unaware of other research on this relationship but we note here that time spent practising is one way in which a person with high internal locus of control can influence outcomes, so the association is a logical one.

CDDQ Decision Status was negatively correlated with CDDQ Difficulties and positively associated with career decision making self-efficacy. The first of these relations make theoretical sense. Indeed, Albion and Fogarty (2002) modelled Difficulties as a latent construct influencing Decision Status in their successful analysis of the structure of the CDDQ. The link between Decision Status and career decision making self-efficacy also makes theoretical sense and is supported by empirical research demonstrating that programmes designed to develop career decision making self-efficacy have a beneficial effect on vocational identity (Scott & Ciani, 2008).

Athletes with a higher level of career decision making self-efficacy were likely to be male, to be satisfied with their decision status, to experience fewer difficulties, to have an internal locus of control, and to have lower levels of external locus of control. These findings are in line with what has been reported in the extensive literature on this topic. Given its widespread influence in this study, it is not surprising that self-efficacy has been identified as one of the key variables to target for interventions aimed at reducing career indecision and career dissatisfaction (e.g., Scott & Ciani, 2008).

Athletes who scored highly on CDDQ Difficulties were more likely to be younger, to be less satisfied with their decision status, to have lower career decision making self-efficacy, and to have higher scores on external locus of control. We have discussed the first three of these relations already. Regarding locus of control, it is not surprising that there is a relationship between believing that luck and significant others are responsible for career outcomes and actually experiencing more decision making difficulties. Analysis of this relationship at the CDDQ item level revealed that it was due primarily to difficulties stemming from Lack of Motivation and Conflicts (internal only). There was also an association with one of the Lack of Information items. Interestingly, that item was “I find it difficult to make a decision because I don’t know what factors to take into consideration”. These findings suggest that when it comes to making career decisions there is an element of confusion in the minds of athletes who have an external locus of control.

Looking at other data relating to locus of control, athletes with higher scores on internal locus of control were likely to spend more time participating in sport, to have a higher degree of career decision making self-efficacy, and to have a stronger sense of athletic identity. These findings are in accord with reports by Hartman et al. (1985) and Carver et al. (1989) that individuals with an internal locus of control demonstrate higher levels of career maturity and less indecision. Brown et al. (2000) reported the same positive association between career decision making self-efficacy and internal locus of control.

Athletes with higher scores on external locus of control were likely to be male, to experience more decision making difficulties, and to have a lower degree of career decision making self-efficacy. Lease (2004) also found that external locus of control was associated with career decision making difficulties and Luzzo (1997) reported the same negative association between external locus of control and career decision making self-efficacy. Clearly, of the two orientations, internal locus of control is to be preferred.

Athletes with a strong sense of athletic identity were more likely to be male, to devote more time to their sport, and to have an internal locus of control. As with previous

research by Brown et al. (2000), athletic identity did not relate to career decision making self-efficacy. Perhaps the most interesting outcome regarding athletic identity was the lack relationship with decision making difficulties. This finding is consistent with other reports that athletic identity was not related to career maturity (Brown & Hartley, 1998; Kornspan & Etzel, 2001) or career development (Murphy et al., 1996). Although Brewer et al. (1993) conceptualised athletic identity as a trait-like construct, career development theory rejects the notion of role exclusivity and rather highlights the variety of roles that an individual is likely to play (Super, 1980). It is not surprising, therefore, that previous explanations of this lack of relationship generally centre around the possible moderating effect of other roles (e.g., student identity) on athletic identity. A further explanation for the lack of relationship is one that we have raised already: elite athletes in this sample were all part of an athlete career education programme, the main purpose of which is to assist with career development issues.

Limitations

The study suffered from several methodological limitations. Firstly, the cross-sectional nature of the research precludes causal inferences regarding the relationships among career decision-making difficulties, career decision status, and the dispositional variables of athletic identity, career locus of control, and career decision-making self-efficacy. We have confined our observations to noting associations among these variables but a longitudinal design, such as that employed by Creed et al. (2005), would obviously provide a better basis for making claims about causal pathways. Secondly, the athletes who completed the questionnaires were volunteers and constituted a relatively small subset of those involved in the ACE programme. It may be that those athletes who chose to participate were either more interested in career matters or at a developmental decision-making stage where the feedback offered by the researchers appealed to them. Thirdly, a larger sample size would have enabled us to undertake modelling work, which was not advisable with a sample of 117. Fourthly, the scales used to measure CDM difficulties, CDM self-efficacy, and athletic identity were treated as unidimensional measures in this study. That suited our purposes but follow-up work should examine relations at the sub-scale level to discover the underlying reasons for the relationships. The relationship between age and career decision making difficulties is a case in point where analyses at the sub-scale level revealed that the problem for younger athletes was confined to difficulties concerning a perceived lack of information.

Recommendations and Future Research

The findings lead to some recommendations for counsellors working with athletes. Integral to the delivery of effective career counselling is the process of firstly assessing the needs of elite athletes and secondly ensuring that the Athlete Career Education programmes available to these athletes meet these needs. In terms of demographic predictors, our findings indicate that career decision making difficulties are not likely to be associated with particular groups. The exception in this study is younger athletes who reported having difficulty with career related information. Athletes in the early stages of their careers may require more support and assistance in making decisions regarding their athletic careers. Otherwise efforts to differentiate the service provided according to demographic variables (e.g., gender, age) is not warranted unless it targets specific variables, such as career decision making self-efficacy (for females) or external locus of control (for males). In general, our findings support claims that interventions aimed at self-efficacy (Scott & Ciani, 2008) and internal locus of control (Kornspan & Etzel, 2001) are likely to prove most beneficial in terms of career planning.

Although no evidence of systematic bias was detected in the sample, future studies would do well to implement a randomised procedure for participant selection. A representative sample from all of the major sporting institutes and academies would provide a better basis for generalising findings. We also recommend research into the range of situational influences that may affect athletic identity such as cultural differences, access to professional support, and timing within the competitive season. Future research should also continue to investigate the validity of the measures used in the present investigation as a means to developing career measures that take into account the unique needs and unique context of elite athletes. Tracking changes in psychological constructs over time through a longitudinal design and supplementing these findings with qualitative data would lead to greater insight into the developmental nature of the career decision making process in athletes.

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Table 1

Descriptive Statistics for Variables (N = 117)

Variable	<i>M</i>	<i>SD</i>	No. of Items	Scale Max	α
CDMSE	3.74	0.57	10	5.00	.82
LOC - INT	4.95	0.49	8	6.00	.59
LOC - EXT	2.52	.81	8	6.00	.81
AIMS	4.87	0.93	10	7.00	.82
CDDQ Decision Status	7.05	1.42	3	9.00	.82
CDDQ Difficulties	3.35	3.92	18	9.00	.91

Table 2

Correlations Among Variables (N = 117)

Variable	1	2	3	4	5	6	7	8
1. Gender								
2. Current Age	.21							
3. Participation hours	-.26	.08						
4. CDMSE	-.25	.04	.08					
5. LOC-INT	-.05	-.01	.24	.36				
6. LOC-EXT	-.23	-.07	.05	-.19	-.03			
7. AIMS	-.19	-.02	.20	.10	.19	.13		
8. CDDQ Difficulties	-.06	-.19	.02	-.47	-.10	.21	-.05	
9. CDDQ Decision Status	-.10	.00	.08	.43	.16	-.13	.15	-.55

Note: Boldface indicates significance at the .05 level.

Table 3

Hierarchical Regression Analysis Predicting CDDQ Decision Status (N = 117)

Variable	B	SE B	β
<u>Step 1</u>			
Career Decision Making Self-Efficacy	1.03	.23	.41*
Locus of Control - Internal	-.02	.27	-.01
Locus of Control - External	-.17	.15	-.07
Athletic Identity	.18	.13	.12
<u>Step 2</u>			
Career Decision Making Self-Efficacy	.51	.24	.20*
Locus of Control - Internal	.08	.24	.03
Locus of Control - External	-.12	.14	-.01
Athletic Identity	.15	.12	.10
Career Decision Making Difficulties	-.44	.09	-.44*

Note. $R^2 = .20$ for Step 1 ($ps < .05$); $\Delta R^2 = .15$ for Step 2 ($ps < .05$).

* $p < .05$

Table 4

Standard Regression Analysis Predicting CDDQ Decision Difficulties (N = 117)

Variable	B	SE B	β
Career Decision Making Self-Efficacy	-1.19	.23	.47*
Locus of Control - Internal	.23	.26	.08
Locus of Control - External	.22	.15	.13
Athletic Identity	-.06	.13	-.04

Note. $R^2 = .21$ ($ps < .05$).

* $p < .05$