Athletic Identity and Sports Participation in People With Spinal Cord Injury

Tomasz Tasiemski
Institute of Rehabilitation, Poland

Paul Kennedy and Brian P. Gardner
National Spinal Injury Centre, UK

Rachel A. Blaikley
University of Oxford, UK

The aims of this study were to investigate “athletic identity” in people with spinal cord injury (SCI), using the Athletic Identity Measurement Scale (AIMS), to evaluate the psychometric properties of the 7-item version, and to identify reasons for and barriers to sports participation in this population. People with SCI (N = 678), even those competing as athletes, reported lower levels of athletic identity than able-bodied adults and adolescents with physical disabilities. AIMS scores varied according to gender, athlete status, and hours of sports participation per week. No relationship was found between athletic identity and depression, anxiety, or life satisfaction. Exploratory factor analysis did not support the 3-factor structure of the AIMS with this population, although internal consistency was good.

Spinal cord injury (SCI) results in a variable loss of sensory and motor capacity, and studies have shown that there is a decrease in sports participation following SCI (Kirkby, Cull, & Foreman, 1996; Tasiemski, Bergstrom, Savic, & Gardner, 2000). This may be due to a number of barriers to post-injury participation such as gaining access to appropriate sporting wheelchairs, learning the new skills involved in wheelchair sports (Wu & Williams, 2001), as well as psychological barriers such as reduced self-confidence. However, due to the physical consequences of SCI and its associated health risks (Cowell, Squires, & Raven, 1986), it could be argued that sports activity is of even more relative importance for this population (Jackson & Davis, 1983; Jochheim & Strohkendl, 1973).

Tomasz Tasiemski is with the Institute of Rehabilitation, University School of Physical Education, ul. Królowej Jadwigi 27/39, 61-871 Poznań, Poland. E-mail: tashma@poczta.onet.pl.
Paul Kennedy and Brian P. Gardner are with the National Spinal Injury Centre, Stoke Mandeville Hospital, Aylesbury Buckinghamshire, HP21 8AL United Kingdom. Paul Kennedy is also with the Isis Education Centre at the University of Oxford, UK. E-mail: Paul.Kennedy@smh.nhs.uk; Brian.Gardner@smh.nhs.uk. Rachel A. Blaikley is with the Oxford Doctoral Course in Clinical Psychology, Isis Education Centre, Warneford Hospital, University of Oxford, Oxford OX3 7JX. United Kingdom. E-mail: rachel.blaikley@hmc.ox.ac.uk.
Athletic Identity in Spinal Cord Injury

Post-SCI sports participation is thought to encourage psychological adjustment to injury, reduce depression, and improve self-image (Jacobs, Roswal, Horaut, & Gorman, 1990; Madorsky & Madorsky, 1983; Monnazzi, 1982). It has been found that higher levels of activity are associated with a smaller discrepancy between pre and post injury self-concept (Jackson & Davis, 1983; Kennedy & Smith, 1990). In addition, it can counteract loss of confidence and mental inactivity (Guttmann, 1976) and results in improved perceptions of physical competence, and self-efficacy in wheelchair mobility (Greenwood, Dzewaltowski, & French, 1990; Hedrick, 1985). Satisfaction with leisure pursuits has also been shown to predict life satisfaction (Kinney & Coyle, 1992), and sports participation is considered to contribute to an overall increase quality of life (Jacobs et al., 1990).

As well as these physical and psychological gains, involvement in sport can also be a catalyst for facilitating social reintegration. Regular physical activity can have substantial social benefits, providing a means of establishing new friendships, sharing experiences, developing social support networks, and reducing handicap (Manns & Chadd, 1999; Monnazzi, 1982; Shephard, 1991). Sports participation has been reported to reestablish contact with the world at large by aiding community integration and improving family relationships (Hanson & Nabavi, 2001; Madorsky & Madorsky, 1983). The opportunity for individuals with physical disabilities to participate in sport alongside able-bodied peers is of particular value, as it normalizes disability, reducing social stigmatization and illustrating the full potential of people with disabilities (Shephard, 1991). Although research is lacking, there are also indications that people with disabilities who partake in sport and are more physically active, experience increased vocational success, higher incomes (Foreman, Cull, & Kirkby, 1997; Nakamura, 1973), and a greater likelihood of employment (Shephard, 1991).

While the sports movement for people with paraplegia and tetraplegia has achieved international acclaim with the Paralympic Games (Guttmann, 1975), athletes with disabilities have been under-represented in sport psychology research (Martin, Adams-Mushett, & Smith, 1995). One reason for this may be that athletes with disabilities have not been considered to be legitimate athletes. Organizations responsible for disability sports are very often of charitable status. As a result, very few people with an SCI can train sufficiently to become full-time “elite” athletes.

It is unclear if the motive for participating in competitive sports and the desire to achieve sporting excellence differs for this population. It has been found that men and women differ with regard to their motives for sports participation (Fung, 1992). Specifically, male athletes cite the need to achieve and obtain status, while female athletes rate friendship as more important. A pilot study by Tasiemski et al. (2000) reported that the most common stated reasons for participating in sports cited by people with SCI were maintenance of a good physical condition and improving upper body strength. There is a need to further understand attitudes toward sports participation and competing at an elite level within this population, as this may help to encourage and raise the profile of sports participation.

Self-concept theory (Markus, 1977) has been applied to the field of sports participation in the able-bodied population. The self-concept is a multidimensional construct of which different dimensions can be activated depending on the situation (Markus & Nurius, 1986). This framework has led researchers to explore the relative salience of common dimensions, with athletic identity forming an important
component for many people (Brewer, Van Raalte, & Linder, 1993). Athletic identity is “the degree to which an individual identifies with the role of an athlete” and it is defined as both a cognitive structure (schema), and a social role (Horton & Mack, 2000, pp. 101). The cognitive element provides a framework for interpreting information, coping with situations, and inspiring behaviors. The social element involves perceptions of others and role in relation to society.

Strength of athletic identity is thought to vary with past and current athletic experience and the relative success or failure in this domain (Horton & Mack, 2000). However, importantly, it has been shown to be a relevant concept for nonathletes as well as athletes (e.g., Brewer et al., 1993; Cornelius, 1995). Research has indicated that strong athletic identity has both positive and negative effects. On the positive side, athletic identity has been shown to be related to health and physical fitness (Marsh, 1993), global self-esteem (Marsh, Perry, Horsely, & Roche, 1995), improved social relationships and confidence (Petitpas, 1978), and participation in physical activity and exercise (Fox & Corbin, 1986); however, it has also been argued that a strong athletic identity might indicate over-commitment to the role, restricting the development of a multidimensional self-concept. Strong and exclusive athletic identity has been linked to post-injury depression (Brewer, 1993), career immaturity (Murphy, Petitpas, & Brewer, 1996), and difficulties adjusting with retirement from sport (Grove, Lavallee, & Gordon, 1997; Lavallee, Gordon, & Grove, 1997; Webb, Nasco, Riley, & Headrick, 1998).

Brewer, Van Raalte, and Linder (1993) developed a measure of athletic identity known as the Athletic Identity Measurement Scale (AIMS). This measures three factors of athletic identity: social identity (the strength to which athletes identify with the athletic role), exclusivity (the degree to which athletes rely on their athletic role compared to other roles such as friend, occupation, etc.), and negative affectivity (the degree of negative emotional response resulting from inability to train or compete). It has been used to assess athletic identity in able-bodied athletes, non-athletes (Brewer, 1993; Brewer, Selby, Linder, & Petitpas, 1999), and adolescent athletes with disabilities (Martin, Mushett, & Eklund, 1994; Martin, Eklund, & Mushett, 1997). Of note, this measure has found differences in levels of athletic identity between males and females, as well as between athletes and nonathletes (Brewer & Cornelius, 2001). Lantz & Schroeder (1999) found that athletic identity was positively correlated with masculinity and negatively correlated with femininity.

Most studies have used a 10-item version of the AIMS, although a 7-item version exists that has been demonstrated to be a valid and reliable measure of athletic identity with able-bodied participants. To date, no study has used the 7-item AIMS with participants with a disability. One of the difficulties in research into athletic identity is the definition of an “athlete” (Silva, 1984). Some studies have relied on previous sporting achievements, while others have relied upon number of current hours of sports participation. Athletic identity is likely to have built up over time and might be high, even for people who do not engage in sports currently (Lantz & Schroeder, 1999).

It may be that athletic identity is a useful concept for understanding sports participation in people with SCI, in comparison to the able-bodied population. This study sought to assess levels of athletic identity in a population of people with SCI, in particular exploring differences in terms of gender, number of hours of sports participation, and athlete status (in terms of achievements). A further aim was to
examine the psychometric properties of the 7-item AIMS and to see if athletic identity was related to anxiety, depression, or life satisfaction in this population. Finally, we were interested in understanding reasons for sports participation within this population.

**Method**

**Participants**

A total of 985 people with SCI participated in this study. Of these, 678 people (56.4%) completed the AIMS. The mean sample age was 44.5 (SD = 12.1; range 20 to 77), and 84% were male. The mean age at time of injury was 26.9 (SD = 8.5; range 18 to 50), and 71.5% were paraplegic, with the remaining 28.5% tetraplegic. The most common causes of injury were traffic accidents (49.8%), falls (18.0%), and sports (15.7%). Ninety-three percent used a wheelchair all the time and the average amount of personal assistance or care required within a 24-hour period was 4.4 hours (SD = 7.0).

The majority of participants were married or living with a partner (51.5%), with 33.5% being single, 13.7% divorced or separated, and 1.7% widowed. Most participants lived in towns (40.9%), with 36.5% living in villages, and 22.6% living in cities. Ninety-two percent of participants lived in housing that was fully adapted or accessible to a wheelchair user. In terms of education, 67.9% of this sample had attended higher education, with the remaining 32.1% educated to secondary school level. Forty-three percent of participants were employed at the time of the study.

**Procedure**

This study received approval from all appropriate Research Ethics Committees. Prior to this study, a pilot study was conducted and published (Tasiemski et al., 2000). Before data collection, 12 persons with SCI provided input regarding questionnaire design and procedures.

For this study, potential participants were identified via patient records at three spinal units in the UK. The following inclusion criteria were used: presence of an SCI (level C5 or below) for at least one year; wheelchair dependent; ASIA grade A, B, or C (Maynard et al., 1997); between 18 and 50 years of age at time of injury, admitted to a spinal unit within 6 months of injury; and a resident within the UK. A total of 1,748 patients met these criteria. Each person was sent a letter explaining the study, along with a questionnaire and stamped, self-addressed envelope. To maximize the response rate, a reminder pack was sent out to participants who did not initially respond 4-6 weeks after the original correspondence.

**Measures**

Participants were asked to complete the following four questionnaires, along with several other questionnaires which formed part of a broader study.

**Sports Participation Questionnaire.** This questionnaire consisted of 26 items (Tasiemski et al., 2000) covering demographic characteristics and sports participation pre and post injury. Demographic characteristics included age, marital status, injury characteristics (such as cause, level of injury, use of wheelchair),
education, employment status, and housing status. Most questions except age were answered using fixed responses. Participants were asked how many hours a week they participated in sport pre and post injury (0, < 1, 1 < 3, 3 < 6 and 6+ hours) in a multiple-choice fixed-response format. In addition, they were asked whether their predominant sport was individual or team based and how many years they had practised the sport. They were also asked whether they were able to practice their favorite sport post-injury and if not, whether this was due to their disability or the lack of opportunity. Participants were asked how difficult it was to access information regarding sport for people with disabilities after injury (complete and regular access, difficult access, or no access). In order to identify athlete status, participants were asked to state their highest level of sporting achievement in terms of international (Paralympic/world championships), national, and regional/local attainment. Finally, participants were asked to identify all the reasons why they engaged in sporting activity post-injury (8 items) and all the reasons that made it difficult for them to engage in sporting activity post-injury (9 items).

Athletic Identity Measurement Scale (7-item version; Brewer, Van Raalte, & Linder, 1993). This is a 7-item self-report questionnaire measuring the degree to which someone identifies themselves with the athlete role. It contains three subscales measuring social identity (the strength to which athletes identify with the athletic role), exclusivity (the degree to which athletes rely on their athletic role compared to other roles such as friend, occupation, etc.), and negative affectivity (the degree of negative emotional response resulting from inability to train or compete). All seven items are answered on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree), and all items are summed to give individual subscale scores and a total score of athletic identity. The 7th item (I would be very depressed if I were ill or injured and could not compete in sport) was amended to include “ill or” as this sample was already injured.

Research has provided general support for the psychometric integrity of the 7-item version of the AIMS. Cronbach’s alpha (Cronbach, 1951) is .81, indicating very good internal consistency (Brewer & Cornelius, 2001), and the 7-item version correlates highly with the 10-item version. The 10-item version has been shown to have construct and face validity as AIMS scores have been shown to increase with level of sport involvement.

The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) is a brief (14-item) self-report questionnaire, which assesses anxiety and depression in non-psychiatric populations (Herrmann, 1997). Seven items relate to each dimension requiring answers on a 4-point scale, e.g., 1 (not at all) to 4 (very often indeed). These are summed to provide measures of anxiety and depression. Zigmond and Snaith (1994) recommend that raw scores of between 8 and 10 identify mild cases, 11-15, moderate cases, and 16 or above, severe cases, for each dimension.

The HADS has been subjected to psychometric evaluation with various adult medical populations (e.g., Johnston, Pollard, & Hennessy, 2000) and non-clinical populations from various countries (Quintana et al., 2003). It has demonstrated good internal consistency with alpha values ranging from .68 to .93 for anxiety and from .67 to .90 for depression (Bjelland, Dahl, Haug, & Neckelmann, 2002). Test-retest reliability has also been demonstrated to be good (.85; Quintana et al., 2003).

The Life Satisfaction Questionnaire (Fugl-Meyer, Branholm, & Fugl-Meyer, 1991). This is a 9-item self-report questionnaire that provides a subjective
measure of quality of life. It provides ratings of participants’ satisfaction with life as a whole and in 8 other specific areas: self-care, leisure, vocation, finances, family life, partner relationship, sexual life, and social contact with friends. The Life Satisfaction Questionnaire has been demonstrated to be a useful and reliable tool when used with a community population of people with SCI (e.g., Post, de Witte, van Asbeck, van Dijk, & Scrijvers, 1998).

Results

Data Analysis

All statistical analyses were performed using the Statistical Package for Social Sciences (SPSS, 1997). Descriptive analysis of data from the Sports Participation Questionnaire and the AIMS total score was performed. In addition, independent t-tests, univariate, and multivariate analyses of variance were performed on the AIMS to assess differences between the genders, sports participation levels, and athlete status.

Internal consistency of the total AIMS score and each subscale was assessed using Cronbach’s alpha co-efficients (Cronbach, 1951). Exploratory factor analysis of the 7-item AIMS was then conducted. Initially, a correlation matrix of the items was produced, indicating many correlations over .3. This, in addition to Bartlett’s Test of Sphericity, $\chi^2(91) = 2289.0, p < .001$, and the Kaiser-Meyer-Olkin measure of sampling adequacy (.857), indicated that the items were sufficiently correlated to justify a factor analysis. A Principal Components Analysis was performed to extract factors with an eigenvalue of one or more. The eigenvalues were then plotted on a scree plot to decide how many should be retained in the model (Cattell, 1966).

Sports Participation in People With SCI. Just over half (52.1%, N = 501) of participants engaged in no sports activities each week. Of those who engaged in some sports activities, 11.9% engaged in less that one hour, 13.2% engaged in 1 < 3 hours, 11.0% engaged in 3 < 6 hours and 10.7% engaged in 6 hours or more. The study sample included 63 (6.4%) international athletes (43 Paralympic medallists, and 20 World Championship medallists), 76 (7.7%) national athletes, and 74 (7.5%) regional athletes. For the purposes of analyses, all others (N = 772, 78.4%) were labelled as “non-athletes.”

The mean number of years engaged in sports was 10.9 (SD = 10.2; range 1 to 45). Seventy-eight percent indicated they preferred individual sports while 22% preferred team sports. Only 42.6% were able to continue to practice their favorite sports post-injury. The remaining participants indicated they were unable to continue post-injury due to their disability (50.6%) or lack of opportunity (6.8%). Additionally, 74.6% indicated that accessing information about practicing sports after SCI was “difficult.” Only 12.9% indicated that information about sports for people with disabilities was complete and regularly covered in the media.

Psychometric Properties of the AIMS, Internal Consistency. Cronbach’s alpha co-efficients (Cronbach, 1951) were calculated to assess the internal consistency of the AIMS total and individual subscales. They were as follows: .87 (total scale), .81 (social identity), .77 (exclusivity), and .71 (negative affectivity). Item-total correlations ranged between .52 and .76.

Exploratory Factor Analysis. A principal components analysis was conducted on the whole sample, as well as on those who engaged in more than
one hour of sport a week and those who were athletes at a regional, national, or international standard. For the whole sample, only one factor was extracted, with an eigenvalue of 4.03, accounting for 57.5% of the variance. Factor loadings of individual AIMS items ranged from .68 to .85. A one-factor solution was also extracted for those who participated in more than one hour of sport per week (eigenvalue = 3.97, accounting for 56.8% variance) and those who were athletes at international, national, or regional standard (eigenvalue = 4.07, accounting for 58.1% of the variance). As only one factor was extracted, no further analyses of the AIMS subscales were considered.

**AIMS (7-Item) Scores in a Population With SCI.** The mean and standard deviation for the AIMS total scale was calculated for the whole sample (mean = 16.48, SD = 9.94) and by gender. The mean score for males was 17.29 (SD = 10.09, N = 569), and for females, it was 12.39 (SD = 10.09, N = 109). An independent t-test revealed that females scored significantly lower than males on the total AIMS scale (p < .01). Similar descriptive statistics of the AIMS total score were calculated by number of hours of sports participation per week as follows: 6 or more hours per week (26.94, SD = 10.95, N = 97), 3 < 6 hours per week (19.87, SD = 9.68, N = 106), 1 < 3 hours per week (16.18, SD = 8.01, N= 126), < 1 hour per week (14.90, SD = 8.94, N = 107), and none (11.59, SD = 7.16, N = 242).

A two (gender) by five (hours of participation) analysis of variance (ANOVA) was calculated on participants’ AIMS scores (dependent variable). There was a significant main effect for hours of participation (F = 26.79, p < .001, effect size = 0.139). To locate the source of the difference, a one way ANOVA with post-hoc comparisons revealed that those who engaged in more hours of sports participation per week had higher AIMS scores than those who engaged in fewer hours, for each group (p < .01, all comparisons). There was also a main effect for gender (F = 23.52, p < .001, effect size = 0.034). However the gender × hours of participation interaction was not significant. The relationship between hours of sports participation and AIMS scores, by gender is shown in Figure 1.

The mean AIMS total score was analyzed by athlete status. The mean score for international athletes (N = 59) was 26.15 (SD = 10.93); the mean score for national athletes (N = 75) was 21.50 (SD = 10.96); the mean score for regional athletes (N = 71) was 19.70 (SD = 9.68); and the mean score for non-athletes (N = 473) was 13.96 (SD = 8.38). A two (gender) by four (athlete status) ANOVA was also calculated on participants’ AIMS scores (dependent variable). In addition to gender (F = 25.75, p < .001, effect size = 0.037), there was a significant main effect for athlete status (F = 13.47, p < .001, effect size = 0.057). In order to locate the source of the difference a one-way ANOVA with post-hoc Tukey comparisons revealed that international athletes scored significantly higher than national athletes (p < .05), regional athletes (p < .001) and non-athletes (p < .001). National athletes and regional athletes scored significantly higher than non-athletes (p < .001, both comparisons), but there was no significant difference between the national and regional athletes.

There was also a significant interaction effect between gender and athlete status (F = 3.29, p < .05, effect size = .015). The relationship between AIMS total scores and athlete status, by gender, is shown in Figure 2. Total AIMS score was significantly higher for male athletes who competed at an international or national level, whereas there was no significant difference in AIMS scores by athlete status, for females.
Athletic Identity in Spinal Cord Injury

Relationship Between Athletic Identity and Anxiety, Depression, and Life Satisfaction. For the whole sample, the mean score for anxiety was 6.9 (SD = 4.2), and the mean score for depression was 5.5 (SD = 3.7), as measured by the HADS. The mean score on the Life Satisfaction Questionnaire was 3.9 (SD = 1.0). Athletic identity scores were not related to these measures (series of Pearson correlations).

Reasons for Sports Participation in People With SCI. Participants rated different reasons for practicing sports post-injury by checking a series of possible responses. The most frequent response for both males and females was “maintenance of good physical condition.” The frequency distribution of responses by sample and gender is shown in Table 1. The most frequent reason for not participating in sports post-injury for the whole sample and both genders, was “lack of accessible sports facilities.” Reasons for not practicing sports post-injury and frequency of responses by sample and gender are shown in Table 2.

Discussion

Just under half of people with SCI who participated in this study engaged in some sporting activity each week, the majority of whom (78%) preferred individual over team sports. Over half of the participants were unable to continue with their favorite

Figure 1— AIMS total scores by gender for number of hours of sports participation per week.
Figure 2 — AIMS total scores by gender and athlete status.

Table 1 Reasons for Practicing Sports Post-Injury: Percentage of Sample by Gender (N = 985)

<table>
<thead>
<tr>
<th>Reasons for practicing sports post-injury</th>
<th>Whole sample</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance of good physical condition</td>
<td>70.7</td>
<td>68.3</td>
<td>82.4</td>
</tr>
<tr>
<td>Improving upper body strength</td>
<td>57.5</td>
<td>56.0</td>
<td>64.9</td>
</tr>
<tr>
<td>Getting out of the house and meeting people</td>
<td>56.4</td>
<td>57.4</td>
<td>51.4</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>55.9</td>
<td>54.6</td>
<td>37.8</td>
</tr>
<tr>
<td>Improving self-esteem</td>
<td>44.8</td>
<td>45.9</td>
<td>39.2</td>
</tr>
<tr>
<td>Improved weight-control</td>
<td>41.1</td>
<td>39.9</td>
<td>47.3</td>
</tr>
<tr>
<td>Competition</td>
<td>41.1</td>
<td>43.2</td>
<td>31.1</td>
</tr>
<tr>
<td>Possibilities for travel</td>
<td>23.6</td>
<td>43.2</td>
<td>31.1</td>
</tr>
<tr>
<td>Other</td>
<td>5.7</td>
<td>4.1</td>
<td>13.5</td>
</tr>
</tbody>
</table>

sport due to their injury or lack of opportunity, and 74.6% indicated that accessing information about sports participation post-SCI was difficult.

In line with previous studies (e.g., Brewer & Cornelius, 2001), this study showed that athletic identity in people with SCI is higher for males than for females. For both males and females, those who engaged in more hours of sports participation per week had higher levels of athletic identity than those who engaged in fewer hours.
However, athlete status, based on sporting achievement, was associated with athletic identity for men, not women; males with higher athlete status showing significantly higher athletic identity than males of lower athlete status.

The mean scores on individual AIMS items were consistently lower than equivalent scores on the same items of the 10-item AIMS, for adolescent swimmers with disabilities (Martin et al., 1994) and able-bodied adults (Brewer & Cornelius, 2001). This was true for gender as well as people who engaged in more than 1 hour of sports participation per week and those with high athlete status. These findings suggest that people with SCI do not see themselves within the athlete role as much as able-bodied individuals do, either due to their injury, the existing social-stigma of disability, or lack of profile or status as an athlete with a disability.

Table 2 Reasons for not Practicing Sports Post-Injury: Percentage of Sample by Gender (N = 985)

<table>
<thead>
<tr>
<th>Reasons for not practicing sports post-injury</th>
<th>Whole sample</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance of good physical condition</td>
<td>70.7</td>
<td>68.3</td>
<td>82.4</td>
</tr>
<tr>
<td>Lack of accessible sports facilities</td>
<td>38.1</td>
<td>37.0</td>
<td>42.0</td>
</tr>
<tr>
<td>Dislike of ‘traditional’ sports for people</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with disabilities, e.g., archery/table tennis</td>
<td>38.1</td>
<td>38.4</td>
<td>36.7</td>
</tr>
<tr>
<td>High dependency in activities of daily living</td>
<td>30.5</td>
<td>29.7</td>
<td>34.0</td>
</tr>
<tr>
<td>Lack of opportunity to practice favorite sports</td>
<td>25.2</td>
<td>24.8</td>
<td>26.7</td>
</tr>
<tr>
<td>Lack of time due to work/other</td>
<td>25.1</td>
<td>25.8</td>
<td>22.0</td>
</tr>
<tr>
<td>Lack of money</td>
<td>20.4</td>
<td>21.7</td>
<td>14.7</td>
</tr>
<tr>
<td>Difficulties with transport</td>
<td>11.8</td>
<td>11.4</td>
<td>13.3</td>
</tr>
<tr>
<td>Other (including pain and family commitments)</td>
<td>17.6</td>
<td>17.2</td>
<td>19.3</td>
</tr>
</tbody>
</table>

or none. However, athlete status, based on sporting achievement, was associated with athletic identity for men, not women; males with higher athlete status showing significantly higher athletic identity than males of lower athlete status.

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There are several alternative explanations. People with SCI, as a consequence of injury, have to adjust to a major loss or losses in relation to their physical mobility and independence. This adjustment might result in the development of a broader self-concept, not solely based in athletic identity, even if these people become high-status athletes. This broader self-concept might result in lower scores on the AIMS. In addition, it might be expected that adolescents would score higher on athletic identity than adults do, irrespective of disability. Adolescents often engage in black and white thinking, which could be argued to lead to over-commitment to one identity, and adolescents’ roles in other areas such as work and family may not have been established due to their life stage. Also, this study found that the majority of people with SCI prefer individual sports, and this could have had an impact on their level of social identity in particular.

An exploratory factor analysis failed to support a 3-factor solution. Only one factor was extracted, accounting for just over half of the variance. This was true for athletes (international, national, and regional) and those who engaged in sport for more than 1 hour per week, as well as the sample as a whole. It might be that the 7-item AIMS is not sufficiently robust to identity three factors compared to the 10-item AIMS. Alternatively, it could be that the constructs of “social-identity,” “exclusivity,” and “negative-affectivity” are not so pertinent for this population.
given that overall levels of athletic identity are lower. The internal consistency of the AIMS with this population was shown to be good.

Brewer (1993) found that a strong and exclusive athletic identity was positively related to post-injury depression. This may be because injury threatens one’s overall self-concept. Other studies have shown that a strong athletic identity is positively related to global self-esteem (e.g., Marsh et al., 1995); however, in the present study, athletic identity does not appear to be related to anxiety, depression, or life satisfaction in people with SCI, which could be argued to support the notion that this population relies on a broader self-concept, even when sports participation is an integral part of their lives. It seems that neither low nor high levels of athletic identity, as measured by the AIMS, indicate a risk for, or protection from, increased psychopathology or lower life satisfaction. This is an important finding, given that sports participation has been shown to encourage psychological adjustment and reduce depression following injury (Jacobs et al., 1990). It seems from these results that athletic identity itself might not be the contributing factor to these positive effects.

The three reasons for participating in sports most often acknowledged by the sample of people with SCI in this study were the following: maintenance of good physical condition, improving upper body strength, and getting out of the house and meeting people. In particular, females with SCI reported both maintenance of good physical condition and improving upper body strength more frequently than males did. They also reported a motive of weight-control more frequently than males did, while males reported enjoyment of practicing sport and enjoyment of competition more frequently. These findings support the pilot study of Tasiemski et al. (2000) but suggest that the main reasons for sports participation in males and females with SCI are similar. It is not possible to extrapolate further conclusions about motives for participation in competitive sports specifically.

The most common reasons for not participating in sports post-injury appear to be injury-related, including lack of accessible sports facilities, dislike of traditional sports for people with disabilities, and high-dependency in activities of daily living. This finding agrees with results of previous studies (e.g., Tasiemski et al., 2000) and further highlights the need to improve the profile and access of sports facilities of people with disabilities. Given that nearly 40% of people in this sample indicated a lack of accessible sporting facilities, it seems that society is failing to acknowledge and encourage sports participation in this population. Most participants were not living in cities (78%), indicating that improved facilities and access are needed at a local level. In addition, “traditional” sports for people with disabilities (e.g., table tennis, archery) are not high profile sports and are not always seen as ways to maintain good physical condition or improve upper-body strength. This highlights a need for the promotion of an increased variety of sports for people with SCI, particularly those that can help with the key motives related to physical fitness.

There are several limitations to the present study. The use of the 7-item AIMS instead of the 10-item version prevented further comparisons of factor scores with previous studies and possibly affected the findings of the exploratory factor analysis. In addition, sports participation was not strictly defined in the questionnaire, potentially resulting in variable respondent interpretations. Sport can be understood in terms of sporting games, competitive sport, athletics, or exercise in general. The questionnaire stated that sport included keeping fit but this was not further explained. More detailed information about sporting disciplines could
have been undertaken in the interview. The present study asked people to indicate whether their main sport was individual or team games. It would have been useful to understand which sports were most popular among this population. It may also have been helpful to understand how people with SCI were introduced to their current sport in order to understand successful ways of introducing and accessing sports.

No measure of current involvement in competitive sports was included in the questionnaire, relying on previous sporting achievements to determine athlete status. Several participants may have retired from sport. It has been found that athletic identity changes after retirement from sports (Grove et al., 1997; Lavallee et al., 1997) and this could have influenced findings in this study.

In terms of reasons for not participating in sports, no psychological factors were included, and thus it is unclear if factors such as lack of self-confidence or social stigma of disability prevented sports participation. This would be useful to understand in order to prioritize the need to enable society to further acknowledge athletes with physical disabilities and to help this population integrate within mainstream sport.

Conclusions

This study highlights that a large proportion of people with SCI do not participate in sports. The most common reasons for this was lack of access to facilities and dislike of traditional sports for people with disabilities. While the 3-factor structure of the AIMS was not supported, analyses revealed good internal consistency for this measure when using it with people with SCI. Analysis of AIMS scores revealed that athletic identity varied according to gender, hours of sports participation, and athlete status within this population; however, people with SCI appear to have a lower level of athletic identity compared to the able-bodied population (Brewer & Cornelius, 2001) or adolescents with physical disabilities (Martin et al., 1994). People with SCI may not identify so strongly with the athlete role for several reasons, for example, post-SCI adjustment may require individuals to develop a broader self-concept, or because society gives this population a message that athletic identity is not a legitimate role. This, along with reasons cited for not participating in sports, suggests that more efforts are needed to improve access for this population to a wide variety of sports.

References


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