HUMAN MOVEMENT
2012, vol. 13 (2), 178–184

AN ASSESSMENT OF ATHLETIC IDENTITY IN BLIND AND ABLE-BODIED TANDEM CYCLISTS

doi: 10.2478/v10038-012-0020-7

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ABSTRACT
Purpose. The purpose of this study was to determine the athletic identity (AI) of blind and able-bodied tandem cyclists and explore its relationship to selected variables. An additional objective of this study was to analyze the reliability of the seven-item Athletic Identity Measurement Scale (AIMS) for tandem cyclists. **Methods.** The participants ($N = 50$) completed measures of AI, variables characterizing their loss of vision (degree and time of loss) and variables characterizing their sports level (the number of hours of training per week and sports experience). **Results.** The AI level of able-bodied tandem captains is significantly higher than the level in visually impaired athletes. Blind tandem cyclists were found to be a fairly homogeneous group according to AI. There were no differences in AI and the degree and time of vision loss, the number of hours of training per week and when a cycling license was received. Psychometric analysis showed that AIMS is a reliable and consistent research tool in the evaluation of AI of tandem cyclists. **Conclusions.** The findings suggest that there is a need to increase the involvement of blind cyclists in the sport as well as their responsibility for sports results.

Key words: athletic identity, blind athlete, tandem cycling

Introduction

Among the numerous contributing elements that determine sports performance, psychological factors are increasingly being taken under consideration. Particular emphasis is placed on the search for personality variables that could point to athletic predisposition in sports performance as well as optimizing psychophysical potential during competition. One of the variables that has received some focus in contemporary literature is athletic identity (AI).

Brewer et al. [1] defined AI as the degree in which an individual identifies him/herself with the role of an athlete. They saw it as a structure containing both cognitive and social elements. The cognitive element allows an individual to clarify information, cope in different situations and influence behavior, while the social element is considered to relate to the perception we hold of other persons and existing social roles. In such a context the notion of AI serves to explain the manifestations of human activity in relation to athletes and non-athletes [1–3]. The above-mentioned authors created a ten-item scale in 1993 named the Athletic Identity Measurement Scale (AIMS) [1] for just this purpose. An updated, shortened seven-item version was proposed by Brewer and Cornelius in 2001 [4], which is currently used in clinical studies on AI.

The strength of AI in athletes was discovered to vary depending on sports experience as well as the success or failure rate in sport itself [3]. A strong positive correlation was found among AI and health and physical fitness [5], self-esteem [6], better social relationships and self-confidence [7], participation in physical activity [8], better sporting success and a larger network of social contacts [3]. On the other hand, other studies pointed to a strong positive correlation between AI and post-injury depression [9], a lack in athletic career maturity [10], and increased susceptibility to the use of drugs in sport [2].

Previous studies found differences in AI between men and women as well as between athletes and non-athletes in both able-bodied [4] and disabled [11] individuals. Positive correlations were also documented between AI and the positive perception of one's physical abilities in children with visual impairments [12] and between AI and the level of the quality of life for athletes with cerebral palsy [13]. One specific case found that disabled athletes who were preparing for the Paralympic Games in alpine skiing were characterized by AI levels similar to their non-disabled peers competing at a similar level [14]. Research conducted by Lantz and Schroeder [15] established that AI is positively correlated to "masculinity" and negatively correlated to "femininity". It was also discovered that the level of AI increases with time even in individuals who were no longer actively involved in sport [15]. Moreover, a study on persons who suffered spinal cord injury demonstrated that AI is positively corre-

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lated with the amount of time spent playing sports [11], and that individuals who took part in team sports featured better psychological adaptation to life after suffering injury than those who practiced individual sports [16].

Most of the research on AI by use of the AIMS scale has been conducted on both able-bodied and disabled athletes as well as individuals who do not practice sport [3, 11, 17]. A perusal of the available literature found no research on AI in disabled athletes whose sports ability and sporting success are determined not just individually but by working together with another individual, as is the case with blind cyclists practicing tandem cycling.

Tandem cycling is a specific form of sport that is available for disabled persons, where a cyclist with reduced vision rides together with an able-bodied cyclist (the captain) on a tandem bicycle. Both riders pedal the drive train (equally providing pedaling power); therefore, success in tandem bicycle races depends equally on both riders and in their ability to work together. However, it is not known whether this is in fact the case as riding tactics are solely in the hands of the able-bodied captain, who can evaluate their standing in relation to the other racers during competition. Furthermore, athletes who are visually impaired or blind are not always recognized by society as "real athletes" [12], which may affect their self-image and change the way in how they perceive their AI in comparison to their able-bodied captains, themselves being individuals who have frequently finished their sports career in able-bodied competition.

In view of the above, the main aim of this study was to answer the following questions:

1. To what extent do blind cyclists and their able-bodied captains identify themselves with the role of an athlete?
2. Are there any differences between them in this regard?
3. Is there a relationship between AI level and the variables that quantify the visual impairment a rider has (the degree of the disability and when it occurred) and AI and the variables that characterize the sports level (number of hours of training and the amount of professional cycling experience since receiving a cycling license) of tandem cyclists?

An additional objective was to also analyze the reliability of the seven-item AIMS scale for tandem cyclists.

Material and methods

The study involved 50 athletes, which represented 81% of all cyclists who practiced competitive tandem cycling in Poland. They belonged to sports clubs for the visually impaired from the cities of Olsztyn, Warsaw, Lublin and Poznan. All of the participants held a competitive cycling license from the Polish Cycling Federation and a valid medical fitness certificate, allowing them to compete in national and international races. In addition, many of the tandem cyclists were world champions and regularly won medals at major cycling events, including the Paralympic Games.

The collected demographic data found that the majority of the respondents were male (72%). The average age was 37 years (SD = 10.2) for the disabled athletes and 33 years for the captains (SD = 7.4). The disabled athletes were in possession of a cycling license for, on average, 5.4 years; the captains had a cycling license for, on average, 11.5 years. More than half (56%) of the disabled cyclists suffered from congenital blindness or visual impairment, with the remaining 44% of participants had an acquired visual disability due to disease or injury. Over 60% of the disabled cyclists were in a stable relationship, 44% held a university degree and more than half of the cyclists (56%) were employed. Within the group of able-bodied cyclists, the captains, three-quarters of this group were in a stable relationship, 56% held a university degree and 76% were employed.

The study used an anonymous questionnaire, which consisted of two parts:

1. A personal questionnaire
   It contained questions on demographic data such as age, sex, education level, job and marital status. Additional questions asked which position the respondent rode in tandem, when the loss of vision took place and its degree for those who were visually impaired, the numbers of hours spent on training per week, and the year when a competitive cycling license was obtained.
2. The AIMS scale
   An assessment of AI was conducted by use of the seven-item AIMS scale [4]. The scale is multidimensional and measures three dimensions of AI: social identity (items #1 and #2), exclusivity (items #3 through #5) and negative affectivity (items #6 and #7). Social identity relates to the strength of how an athlete views him/herself as occupying the role of an athlete. Exclusivity is the degree to which an individual draws their identity from the role of an athlete, while at the same time identifying themselves to a lesser extent with other life roles (e.g., a student, a friend, an employee). Finally, negative affectivity relates to negative emotional reactions that are the result of a pause in training or competition due to injury, illness or retirement from sports. The respondents expressed their opinions on a seven-point Likert scale, where "1" signifies that an individual "strongly disagrees" with an opinion while "7" signifies that they "strongly agree". The sum of all the points determined the level of AI, with a higher score representing a stronger identity to the role of an

athlete. Although the AIMS scale was developed for an able-bodied populations [1], it has been widely used in studies on persons with disabilities [11, 13, 16, 18, 19]. Previous analysis on the psychometric properties of the seven-point AIMS scale found high internal consistency (Cronbach α = 0.81 to 0.83) in studies on able-bodied individuals [1, 4], and also in studies conducted on individuals with spinal cord injuries (α = 0.90) [16]. The AIMS scale used in this study had been translated into Polish by Tasiemski [20] in a scientific monograph, and the accuracy of the translation was verified by a sworn English translator.

All of the demographic data were subjected to descriptive analysis, including their statistical frequency (*N*) and percent (%). The scores from the AIMS scale were presented as arithmetic mean ($\bar{x}$) for each of the seven items and also provided their standard deviation (SD). The reliability of the AIMS scale was analyzed by using Cronbach's alpha coefficient (α). Due to the lack of a normal distribution of the variables as well as the presence of heterogeneity of variance, the nonparametric Mann-Whitney *U*-test (*Z*) was used to assess the differences of AI between the disabled athletes and captains as well as the potential differences of AI among the disabled athletes themselves due to the a number of intermediate variables: the degree of the visual disability (blind or visually impaired), the time when vision was lost (whether acquired or from birth) and the number of hours of training per week (9–12 and 13–16 hours). Finally, Spearman's rank correlation coefficient (r_s) was used to analyze the differentiation of AI based on when the rider received their competitive cycling license. In addition, in the division of the respondents in terms of the degree of impaired vision, individuals who lost their sight before the age of three (who therefore had a lack of visual memory) were included into the group of blind cyclists. The able-bodied athletes were merged with regard to gender, as well as athletes with disabilities, due to lack of significant differences in AI between male and female tandem cyclists. All analysis was performed using analytic software SPSS Statistics ver. 14.0 (IBM, USA).

Results

Before detailed statistical analysis was performed, an assessment of the research tool's reliability was made. It found that the reliability of the AIMS scale for tandem cyclists was high (α = 0.87), with the reliability of the scale for each of the items presented in Table 1.

The AI level of the visually impaired ($\bar{x}$ = 24.84; range: 7–49) and able-bodied ($\bar{x}$ = 36.40; range: 7–49) cyclists was found to be statistically significant (Z = –4.461, $p \leq 0.01$). Significant differences were also found between both groups with respect to six opinions found

Table 1. The reliability of the AIMS scale after removing the individual scale items

Item.	AIMS scale	α after removing the scale items – tandem cyclists
1.	I consider myself an athlete	0.85
2.	I have many goals related to sports	0.85
3.	Most of my friends are athletes	0.87
4.	Sport is the most important aspect of my life	0.84
5.	I spend more time thinking about sports than anything else	0.85
6.	I feel bad about myself when I do poorly in sports	0.84
7.	I would be very depressed if I were injured and could not compete in sport	0.88

Table 2. The mean values for each opinion on the AIMS scale

Item.	AIMS scale	Disabled cyclists (*N* = 25)		Captains (*N* = 25)		*U*-test
		$\bar{x}$	SD	$\bar{x}$	SD	*Z*
1.	I consider myself an athlete	4.16	1.86	5.56	1.19	–2.800
2.	I have many goals related to sports	4.48	1.58	6.28	0.74	–4.073*
3.	Most of my friends are athletes	1.88	1.05	2.72	0.84	–3.051*
4.	Sport is the most important aspect of my life	2.88	1.74	5.36	1.25	–4.366*
5.	I spend more time thinking about sports than anything else	2.56	1.66	4.04	1.31	–3.206*
6.	I feel bad about myself when I do poorly in sports	3.56	1.81	5.92	0.86	–4.540*
7.	I would be very depressed if I were injured and could not compete in sport	5.32	1.55	6.52	0.51	–3.174*

* $p \leq 0.05$

Table 3. The results of the AIMS scale in relation to the degree of visual disability

Degree of visual disability	Disabled cyclists		AIMS scale	
	N	%	$\bar{x}$	SD
Blind	13	52	26.00	8.09
Visually impaired	12	48	23.53	7.93

Table 4. The results of the AIMS scale in relation to when vision began to fail

Time when vision failed	Disabled cyclists		AIMS scale	
	N	%	$\bar{x}$	SD
From birth	14	56	24.45	8.50
Later in life	11	44	25.14	7.56

Table 5. The results of the AIMS scale in relation to the number of hours of training per week

Number of hours of training per week	Disabled cyclists		AIMS scale	
	N	%	$\bar{x}$	SD
9–12 hours	17	68	21.63	4.50
13–16 hours	8	32	26.35	8.84

on the AIMS scale (with the exception of item #1). The group of able-bodied captains scored higher than the disabled cyclists (Tab. 2).

No significant (ns) differences were found in the AI level of the disabled cyclists ($Z = -0.82$; ns) in terms of the degree they had a visual disability (Tab. 3).

In addition, no significant differences were found in the AI level of the disabled cyclists ($Z = -0.11$; ns) with respect to when their vision began to fail (Tab. 4).

All of the disabled athletes were found to train from 9 to 16 hours per week and were therefore, for the purposes of the study, divided into two further subgroups: cyclists who trained intensively (9–12 hours per week) and very intensively (13–16 hours per week). Nonetheless, the number of hours spent on training tandem cycling each week did not significantly differentiate ($Z = -1.17$; ns) the AI level of the disabled athletes (Tab. 5).

Furthermore, no significant relationships ($r_s = 0.18$; ns) were found between the length of time since receiving a cyclist license ($\bar{x} = 5.4$ years, SD = 3.92) and the AI level of the disabled tandem cyclists. Additionally, analysis was also performed on the group of able-bodied captains and the relationships between the number of hours spent training per week and the period when they received their cycling license. Similar to the visually impaired cyclists, no significant differences and relationships were found among these variables: the number of hours of training per week ($Z = -0.63$, ns) and the period of holding a cyclist license ($r_s = 0.03$, ns).

Discussion

The main objective of this study was to question to what extent do visually impaired cyclists and their non-disabled captains identify themselves with the role of an athlete and whether there were any differences among these two groups. Psychometric analysis, which revealed that the AIMS scale is a reliable and consistent research tool in the evaluation of AI in tandem cyclists.

Studies conducted on the AI of disabled athletes have suggested the level of athletic involvement in sports is a more important factor influencing AI than the functional status of the athlete [14]. The results obtained in this study do not support this hypothesis. Despite the equal involvement of both cyclists, the visually impaired athletes showed lower levels of AI in relation to their able-bodied captains. Moreover, the level of involvement as measured by the number of hours of training per week was proved to have no connection with AI among both the visually impaired and able-bodied cyclists. Several factors may have contributed to such an outcome.

First, of considerable importance may be the type of disability the athlete is afflicted with. For example, blind individuals are characterized by having personalities that include qualities such as being introverted, passive, withdrawn and lacking social skills [21, 22]. These are emotional characteristics that develop over time and are directly caused by a blind person's experience with the restrictions they face in the outside world. On the other hand, AI is associated with such qualities such as a willingness to compete [23], higher levels of social competence [3], a positive self-image, increased self-confidence and a willingness to take on challenges [24]. A comparison of these two types of personalities naturally points to them being opposites. The specific personality characteristics of blind individuals can influence the way AI develops in their mind. This area undoubtedly requires far more in-depth analysis and research aimed at assessing the relationship between AI and the personality factors associated with different types of disabilities. This study attempted to introduce such a research component through the division of the subjects in the degree and time when vision was lost. Based on available literature, we assumed that there were difference in the functioning of individuals who were completely blind and those who featured some vision loss, as well as those who were blind from birth or those who later lost their vision. Each group features a slightly different adaptation process to the afflicting disability and, therefore, could lead to different cognitive and emotional consequences [25]. However, the results of this study found no relationship between these variables and AI.

Another factor that may influence the differences in the results of both groups is the specificity of tandem cycling, in which decisions are made mostly by the able-bodied captains. By having the ability to better assess a given situation, captains determine to a greater extent the tactics used in a race and thus carry greater responsibility in its outcome. Naturally, the greater responsibility an individual has, the better they identify themselves with the activity they are performing (in this case the role of an athlete). It can also be assumed that the goal for most blind athletes is not the achievement of sporting success. Based on results of studies conducted on individuals with musculoskeletal disorders [20], one can also assume that persons with visual impairments treat sport as an opportunity to meet new friends, put value in their lives, overcome their own weaknesses and fears, and a way to travel and see the world. A contradiction to this was the fact that the group of captains evaluated each of the items from the AIMS scale higher than the disabled cyclists, which allows us to conclude that captains are more involved in direct competition, are more ambitious and place more emphasis and planning in cycling as a sport that is an integral part of their lives.

A third way to explain the discrepancy of the results between both groups may be the effect of the time which elapsed since receiving a cyclist license. Almost all of the captains received their licenses significantly earlier than the visually impaired cyclists. This points to the fact that most captains had more competitive experience before they began riding in tandem. Previous research postulates that persons who were physically active for longer periods of time were more likely to have stronger AI [3, 26]. This suggests that the length of one's competitive career needs to be taken into account when interpreting the results of AI. On the other hand, this study found no relationships between the length of time of having a cycling license to AI in both the able-bodied and visually impaired athletes. Similar results were also obtained by Groff and Zabriskie [14], who examined the relationship between career length and AI in disabled skiers. Undoubtedly, the problem of athlete seniority and the large discrepancy in findings requires further analysis in larger and more diverse populations.

Due the lack of available research, both domestic and foreign, on the AI of blind athletes, the results of this study were compared (Tab. 6) to the results obtained on a group of disabled swimmers with cerebral palsy, amputation of the lower limbs, and after spinal cord injury; on a group of *les autres* individuals [19]; and adults without disabilities (athletes and non-athletes) [4].

As the table shows, the visually impaired tandem cyclists are characterized by low levels of AI, not only in comparison to their able-bodied captains, but also when compared to disabled athletes of other sports. This is a puzzling result, especially when one considers that the athletes in this study are professionals, who successfully compete at the international level. This may confirm the hypothesis that the specificity of the sport does have an effect on AI, where in this case the non-uniform distribution of responsibility in tandem cycling plays a large role in sporting outcome.

Furthermore, the captains in this study received the highest scores in five items from the seven-item scale. This demonstrates the high level of AI in able-bodied tandem cyclists when compared to the rest of the athletes. The group of captains scored significantly lower only when questioned about social identity, which could be partially explained by the low popularity of tandem cycling. The overall high level of AI in captains could support the thesis that this is in part due to the increased responsibility they hold in tandem cycling.

The results presented in this study could provide a number of important suggestions for coaches of tandem cycling. Every coach knows that the outcome of a team depends on the concentrated effort of all of its members; this is largely conditioned by having a common goal. The results of this study suggest that the goals for tandem cyclists may be somewhat different, where captains better identify themselves with the role of an athlete than visually impaired cyclists. It seems that a good way at increasing the level of competition would

Table 6. The mean values for each item in the AIMS scale in comparison to other studies

Item.	AIMS scale	Disabled cyclists (own research)	Captains (own research)	Martin et al. [19]	Brewer, Cornelius [4]
		$\bar{x}$	$\bar{x}$	$\bar{x}$	$\bar{x}$
1.	I consider myself an athlete	4.2	5.6	5.9	5.7
2.	I have many goals related to sports	4.5	6.3	6.0	5.4
3.	Most of my friends are athletes	1.9	2.7	4.3	5.0
4.	Sport is the most important aspect of my life	2.9	5.4	4.5	4.0
5.	I spend more time thinking about sports than anything else	2.6	4.0	3.4	3.7
6.	I feel bad about myself when I do poorly in sports	3.6	5.9	4.5	5.0
7.	I would be very depressed if I were injured and could not compete in sport	5.3	6.5	5.9	4.8

be to encourage blind riders to become more involved in both training and competition. In such a context, a central factor would be increasing the importance of blind athlete's decisions made during a race, which would then increase their level of responsibility in the outcome of the race.

The study featured here not only answered the formulated research questions, but also provides a starting point for future research in this area. Uncovering the factors responsible for lower AI levels in blind athletes appears to be particularly necessary when considering the overall small number of studies carried out the physical activity of disabled individuals. Of particular interest can be data on the AI of blind athletes who are more directly responsible for their results in competition, such as blind runners (a guide only provides directional input) or athletes who play goalball (with no guides).

A limitation of this study was the small sample size of athletes (*N* = 50), as well as the fact that all of the subjects were from a single country. This does significantly reduce the possibility of providing wide-ranging conclusions, though it should be noted that this study was conducted on 81% of all competing tandem cyclists from Poland. Nonetheless, future studies ought to enlarge the scope of its research by including the results of tandem cyclists from other countries. In addition, comparative analysis that takes into account a wider range of sports and different types of disabilities should be conducted, as it cannot be ruled out that they have a different impact on the AI of disabled athletes.

Conclusions

The following conclusions can be stated based on the results of this study:

1. The AI level of tandem captains is significantly higher than the AI level of visually impaired tandem cyclists.
2. Visually impaired tandem cyclists are a fairly homogeneous group with respect to AI. There were no differences in AI and the degree and time of vision loss, the number of hours of training per week or the length of time since receiving a cycling license.
3. Psychometric analysis revealed that AIMS is a reliable and consistent research tool in the evaluation of AI in tandem cyclists.

References

1. Brewer B.W., Van Raalte J.L., Linder D.E., Athletic identity: Hercules' muscles or Achilles' heel? *Int J Sport Psych*, 1993, 24 (2), 237–254.
2. Cornelius A., The relationship between athletic identity, peer and faculty socialization, and college student development. *J Coll Student Dev*, 1995, 36 (6), 560–573.
3. Horton R.S., Mack D.E., Athletic identity in marathon runners: Functional focus or dysfunctional commitment? *J Sport Behav*, 2000, 23 (2), 101–110.
4. Brewer B.W., Cornelius A.E., Norms and factorial invariance of the Athletic Identity Measurement Scale. *Acad Athlet J*, 2001, 16, 103–113.
5. Marsh H.W., Physical fitness self-concept: relations of physical fitness to field and technical indicators for boy and girls aged 9–25. *J Sport Exerc Psychol*, 1993, 15, 184–206.
6. Marsh H.W., Perry C., Horsely C., Roche L., Multidimensional self-concepts of elite athletes: How do they differ from the general population? *J Sport Exerc Psychol*, 1995, 17 (1), 70–83.
7. Petitpas A.J., Identity foreclosure: a unique challenge. *Pers Guid J*, 1978, 56 (9), 558–561, doi: 10.1002/j.2164-4918.1978.tb05310.x.
8. Fox K.R., Corbin C.B., An extension to a model of physical involvement: A preliminary investigation into the role of perceived importance of physical abilities. In: Watkins J., Reilly T., Burwitz L. (eds.), Sports science. Spon, London 1986, 223–228.
9. Brewer B.W., Self-identity and specific vulnerability to depressed mood. *J Pers*, 1993, 61, 343–364, doi: 10.1111/j.1467-6494.1993.tb00284.x.
10. Murphy G.M., Petitpas A.J., Brewer B.W., Identity foreclosure, athletic identity, and career maturity in intercollegiate athletes. *Sport Psychol*, 1996, 10 (3), 239–246.
11. Tasiemski T., Kennedy P., Gardner B.P., Blaikley R.A., Athletic identity and sports participation in persons with spinal cord injury. *Adapt Phys Act Q*, 2004, 21 (4), 364–378.
12. Shapiro D., Athletic identity and perceived competence in children with visual impairments. *Palaestra*, 2003, 19 (4), 6–7.
13. Groff D.G., Lundberg N.R., Zabriskie R.B., Influence of adapted sport on quality of life: Perceptions of athletes with cerebral palsy. *Disabil Rehabil*, 2009, 31 (4), 318–326, doi: 10.1080/09638280801976233.
14. Groff D.G., Zabriskie R.B., An exploratory study of athletic identity among elite Alpine skiers with physical disabilities: Issues of measurement and design. *J Sport Behav*, 2006, 29, 126–141.
15. Lantz C., Schroeder P., Endorsement of masculine and feminine gender role orientations: Differences between identification with and participation in the athletic role. *J Sport Behav*, 1999, 22 (4), 545–557.
16. Tasiemski T., Brewer B.W., Athletic identity, sports participation, and psychological adjustment in persons with spinal cord injury. *Adapt Phys Act Q*, 2011, 28 (3), 233–250.
17. Andersen M., Li H., Athletic identity in China: Examining the AIMS in a Hong Kong sample. *IJSEP*, 2008, 6, 176–188.
18. Martin J.J., Eklund R.C., Mushett C.A., Factor structure of the Athletic Identity Measurement Scale with athletes with disabilities. *Adapt Phys Act Q*, 1997, 14 (1), 74–82.
19. Martin J.J., Mushett C.A., Eklund R., Factor structure of the Athletic Identity Measurement Scale with adolescent swimmers with disabilities. *Braz Int J Adapt Phys Edu Res*, 1994, 1 (1), 87–99.
20. Tasiemski T., Life satisfaction and sporting activity in persons with spinal cord injury. Polish-British comparative study [in Polish], AWF, Poznań 2007.

21. MacCuspie P.A., The social acceptance and interaction of visually impaired children in integrated settings. In: Sacks S.Z., Kekelis E.S., Gaylord-Ross R.J. (eds.), The development of social skills by blind and visually impaired students: Exploratory studies and strategies. American Foundation for the Blind, New York 1992, 83–102.
22. Kef S., Bos H., Is Love Blind? Sexual behavior and psychological adjustment of adolescents with blindness. *Sex Disabil*, 2006, 24 (2), 89–100, doi: 10.1007/s11195-006-9007-7.
23. Martin J.J., Adams-Mushett C., Smith K.L., Athletic identity and sport orientation of adolescent swimmers with disabilities. *Adapt Phys Act Q*, 1995, 12 (2), 113–123.
24. Ryska T.A., The effects of athletic identity and motivation goals on global competence perceptions of student-athletes. *Child Stud J*, 2002, 32 (2), 109–129.
25. Majewski T., Psychology of blind and visually impaired [in Polish]. PWN, Warszawa 1983.
26. Curry T.J., The effects of receiving a college letter on the sport identity. *Sociol Sport J*, 1993, 10 (1), 73–87.

Paper received by the Editors: November 23, 2011
Paper accepted for publication: March 1, 2012

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