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**Motivation towards sports and academics careers in elite winter sport Slovenian and Italian athletes: The role of internal and external factors**

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**Key words:** dual career policies, winter sport athletes, motivational factors, SAMSAQ-EU, school systems**Abstract:**

Background and aim. In considering the lack of structural dual career measures in Italy and Slovenia, the aim of this study was to evaluate internal (e.g., motivation towards sports and education) and external (e.g., sport, academic, psychosocial, and financial aspects) factors of dual career (DC) of current elite winter sports Italian and Slovenian athletes.

Methods. The European Student-athletes' Motivation towards Sports and Academics Questionnaire (SAMSAQ-EU) and an informative questionnaire were administered to 123 elite Italian (n= 57; females: n =16; males: n =41) and Slovenian (n=66; females: n=31; males: n=35) athletes. Principal Axis Factoring extraction and Varimax/Kaiser Normalization rotation methods ascertained the SAMSAQ-EU three-factor model (e.g., Student Athletic Motivation, SAM; Academic Motivation, AM; Career Athletic Motivation, CAM). A one-way ANOVA and a correlation matrix ( $p \leq 0.05$ ) were applied to ascertained differences between countries and relationships between internal and external variables, respectively.

Results. For internal factors, a difference ( $p=0.013$ ) between countries emerged for AM only, with highest values ( $3.80 \pm 0.76$ pt) for Slovenians and lowest for Italians ( $3.11 \pm 0.5$  pt), independently from gender. Relationships ( $p \leq 0.01$ ) were found for AM with current schooling status and father's education and for CAM with problems in sports/academic career.

Conclusions. Findings indicate that national socio-cultural systems influence the athletes' motivation towards DC, with parents having a relevant role in DC paths of their progeny. This study confirmed the need of specifically tailored DC parenting education programmes, which will empower them to effectively provide DC support for athletes as students.

**Introduction**

In 2007, the term “dual career” (DC) was introduced in official European documents to depict the difficulties elite athletes face in combining sport and academic careers [European Commission 2007], which could result in academic dropout when athletes prioritize sport commitment or in sport disengagement when they are determined to pursue a degree [Conzelmann, Nagel 2003; Donnelly, Petherick 2004; Wylleman, Reints 2010; Park *et al.* 2013]. Indeed, DC paths encompass both internal factors related to the motivation and responsibilities of individual athletes and external factors related

to socio-cultural aspects and responsibilities of different stakeholders [Capranica, Guidotti 2016]. To support the talented and elite athletes, in the last decade the European Parliament [2003, 2016] and the European Commission [2011, 2014] included DC in their policy agenda and provided the European Guidelines on Dual Careers of Athletes [European Commission 2012]. Furthermore, in the last decade the European Commission has offered financial support for trans-national cooperation between sport and academic institutions to establish DC partnerships aimed at advancing the holistic development of athletes and their potential integration in the labour market at the end of their sports career [European

Commission 2016], and financed a European study to define minimum quality requirements for DC services [Amsterdam University of Applied Science *et al.* 2016].

In having full competence in the field of sport and education, European Member States show a variety of national DC approaches, which determine relevant differences in relation to the sport- and education/work-specific requirements, and eligibility criteria for DC programmes and services [Parrish 2003; Amara *et al.* 2004; Aquilina, Henry 2010; Caput-Jogunica *et al.* 2012; Henry 2013; Amsterdam University of Applied Science *et al.* 2016; Capranica, Guidotti 2016]. In relation to the DC policies in place, Member States have been, according to Aquilina and Henry [2010], classified in four categories encompassing: 1) State-centric regulation, with Government legislation or statutory regulations on DC; 2) State as sponsor/facilitator, with States promoting formal DC agreements; 3) National Sporting Federations/Institutes as intermediary, with national governing or sport bodies negotiating DC academic paths; and 4) Laissez-faire/No Formal Structures. In light of the lack of institutional support, European elite student-athletes living in countries adopting the Laissez-faire approach (e.g., Malta, Cyprus, Czech Republic, Ireland, Italy, the Netherlands, Malta, Slovakia and Slovenia) have to personally negotiate their DC paths based on their motivations and skills.

Recently, a systematic literature review revealed an emerging academics conversation on different dimensions (e.g., individual, interpersonal, social and policy) of European DC [Guidotti *et al.* 2015], with the majority of the investigations pertaining the athletes' perceived reasons for maintaining involvement in sport and education, career transitions, and motivations towards academic and sport careers. In particular, according to the European physical activity determinants framework [Condello *et al.* 2016], the athlete capability to combine sport and education dual career pertains to the cluster Intra-Personal Context and Wellbeing, which includes also psychological aspects such as personal goals/outcome expectancies/achievement orientation/motivation. Indeed, psychological factors are direct determinants of engagement in sports [Cortis *et al.* 2017], with motivation towards dual career and student-athlete identity considered crucial for engaging in sports and academics [Gaston-Gayles 2005; Rasmussen, 2009]. Furthermore, gender, age, type of sport, competition level, and relevant socio-cultural aspects can be considered predictors of academic achievement [Comeaux, Harrison 2011; Harrison *et al.* 2010; Sellers 1992], with differences related also to national contexts [Lupo *et al.* 2015; Ryba *et al.* 2015; Stambulova, Ryba 2014; Fuchs *et al.* 2016; Jaczynowski *et al.* 2012]. In light of these relevant differences, there is a need for cross-national research based on sound theoretical constructs and measurement instruments validated across the Member States [Lupo *et al.* 2015; Stambulova, Ryba 2014; Stambulova *et al.* 2007]. Several cross-national

studies focused on the internal DC factors pertaining to the academic and athletic motivations and identities of European student-athletes competing in individual and team sports [Lupo *et al.* 2012; Lupo *et al.* 2015; Lupo *et al.* 2017a, b; Kerstajn, Doupona-Topic 2017]. Based on Achievement Motivation Theories [Atkinson 1974], the Expectancy Value Theory [Spence, Helmreich 1983], and Self-Efficacy Theory [Bandura 1977], the Student-athletes' Motivation toward Sports and Academics Questionnaire [SAMSAQ; Gaston-Gayles 2005] proved to be a valuable tool for cross-national comparisons. This instrument presents three distinct factor models (e.g., Student Athletic Motivation - SAM; Academic Motivation - AM; and Career Athletic Motivation - CAM) and has been validated for Italian [SAMSAQ-IT; Guidotti *et al.* 2013] and European student-athletes [SAMSAQ-EU; Lupo *et al.* 2012, 2014]. However, controversial results emerged due to the heterogeneity of sports disciplines, and the authors claimed that future investigations in this area should be focused on specific sports [Lupo *et al.* 2014]. In fact, sport disciplines substantially vary in training and competitive requirements and schedules (i.e., several consecutive months for team sports and packed periods in individual sports), which could affect differently the student-athletes' capability to successfully organise their athletic and educational commitments.

The extent to which an athlete meets the needs, expectations, and demands of DC paths could be influenced by external factors beyond those internally linked to his/her motivation. Indeed, the psychological domain (i.e., the athletes' perceived problems in coordinating academic and sport careers and eventual educational drop out) is deeply intertwined with the athletic (i.e., time spent for travelling to and from training venues in addition to the actual time devoted to training; professional or non-professional athletic level); academic (e.g., high-school, university, vocational education), psychosocial (e.g., parental support and level of education; community-scale) and financial (e.g., scholarships, monthly income, benefits) domains [Tekavc *et al.* 2015]. Due to the nature of their disciplines, winter sports represent a unique challenge for DC because athletes need specific weather conditions and infrastructures (e.g., ski resorts for alpine skiing; trampolines for ski jumping; ice tracks for bobsleigh, luge and skeleton; arenas for ice hockey and ice skating) to train and compete [Kerstajn, Doupona-Topic 2017]. In general, for several months athletes move or travel daily from their home to commit in the discipline of their interest and are unable to attend their regular school obligations. In this context, DC paths are very demanding and might favour DC dropouts [Baron-Thiene, Alfermann 2015]. This phenomenon could be especially relevant in countries having no structured DC policies for talented and elite athletes in spite of their strong winter sports tradition, like Italy and Slovenia. Indeed, investigations on

internal (e.g., the athletes' motivation toward academic career, sport career, or both) and external (e.g., organisational, psycho-social, financial) factors of DC could contribute to a deeper understanding of DC challenges and opportunities in this specific population.

Thus, the aim of this study was to examine the relationship between internal and external factors for DC in Italian and Slovenian winter sports (e.g., cross-country skiing, ski jumping and biathlon) athletes. It has been hypothesised that: 1) differences between countries would emerge in the internal and external factors of DC; and 2) internal factors of DC would be differently related to external ones.

## Methods

### Subjects

The sample consisted of 123 elite Italian ( $n = 57$ ; females:  $n = 16$ ; age =  $22.12 \pm 4.01$  yrs; males:  $n = 41$ , age =  $24.05 \pm 4.36$  yrs) and Slovenian ( $n = 66$ ; females:  $n = 31$ ; age =  $23.23 \pm 5.99$  yrs; males:  $n = 35$ , age =  $22.00 \pm 4.71$  yrs) athletes participating in international competitions of cross-country (Total: 43.9%; Italians: 52.6%; Slovenians: 36.4%), skiing ski jumping (Total: 27.6% Italians: 14.0%; Slovenians: 39.4%), and biathlon (Total: 28.5% Italians: 33.3%; Slovenians: 24.2%). Most respondents participated in the Olympic Games, World Championships and World Cup races (Italians: 66.6 %, Slovenians: 62.0%) whereas the others took part in the Continental and IBU Cups, which are the most important competitions after the World Cup ones.

### Procedures

#### Internal Factors

To investigate the athletes' motivation toward DC, participants were administered on-line the harmonised psychometric instrument SAMSAQ-EU [Lupo *et al.* 2012, 2015]. To guarantee equivalence in the meaning of the SAMSAQ-EU items, the back translation method [Su, Parham 2002] was used for the Italian and Slovenian languages. In line with previous studies [Fortes *et al.* 2010; Gaston-Gayles 2005; Guidotti *et al.* 2013; Lupo *et al.* 2012], participants were required to indicate their level of agreement on a 6-point Likert scale (i.e., from a minimum of 1 – very strongly disagree, to a maximum of 6 – very strongly agree) to each SAMSAQ-EU item [Lupo *et al.* 2015]. Participants were ensured that there were no right or wrong answers, and were assured the confidentiality of the individual responses.

#### External Factors

Live interviews encompassing 12 issues related to athletic, academic, psychosocial, and financial aspects (Table 1) were performed with participants answering according to a 6-point Likert scale ranging from a minimum

of 1 (e.g., “strongly disagree”) to a maximum of 6 (e.g., “strongly agree”).

**Table 1.** Athletic, academic, psychosocial, and financial aspects considered for the live interviews conducted for Italian and Slovenian athletes (i.e., answers from a minimum of 1, “strongly disagree”, to a maximum of 6, “strongly agree”).

<i>Athletic aspects</i>	
1.	Training hours per week, also in relation to specific winter sports (i.e., cross-country skiing; ski jumping; biathlon);
2.	Time to training (i.e., time of driving to and from trainings);
3.	Status of professional athlete;
<i>Academic aspects</i>	
4.	Current schooling status (i.e., university education, short-cycle or vocational education, high school)
5.	Educational level achieved during the active sport career (i.e., university education, short-cycle or vocational education, high school);
6.	Academic dropout due to sport career;
<i>Psychosocial aspects</i>	
7.	Living town dimension (i.e., athletes living in towns with more or less than 10.000 inhabitants);
8.	Problems in coordinating sport and academic career (i.e., “very little”, “some”, “too many”);
9.	Father's educational background;
10.	Mother's educational background;
11.	Parental direction for the choice of their son/daughter's sport practice.
<i>Financial aspect</i>	
12.	Monthly income, scholarships and premiums as benefit to combining both careers;

### Statistical Analysis

Responses to the SAMSAQ-EU were analysed by means of a research factor analysis, the Principal Axis Factoring extraction and Varimax with Kaiser Normalization rotation methods were considered to verify the applicability of the three-factor model (e.g., SAM, AM, CAM). In line to the literature [Costello, Osborne 2005], the following criteria were adopted: 1) the minimum presence of five items for each factor; 2) if an item loaded on a single factor, only values  $\geq 0.40$  were taken into account; and 3) if an item loaded on two factors, a 0.32 threshold of acceptability was set for both values. To evaluate the internal consistency of items on each SAMSAQ-EU subscale, reliability estimates (Cronbach's alpha coefficients) were computed, considering a Cronbach's alpha coefficient of  $\geq 0.7$  acceptable for internal consistency [O'Donoghue 2012]. Items loading on two factors were used in computing composite scores for both factors [Gaston-Gayles 2005].

A one-way analysis of variance was applied to test differences between gender and countries in the internal and external factors. Bivariate correlations between internal and external factors were tested by means of the Pearson's rank test. All statistical analyses were conducted

by means of the IBM SPSS (20.0; SPSS, Inc., Chicago, IL), with an alpha level of 0.05.

## Results

### Internal factors

The SAMSAQ-EU given to Italian and Slovenian student-athletes (explained variance = 33.86%; subject to

item ratio = 3.2) showed a three-factor model (AM = 13 items; SAM = 11 items; and CAM = 7 items), with satisfactory Cronbach's alpha coefficients for the three subscales (Table 2). Nine items (i.e., 2, 8, 9, 13, 19, 20, 34, 37, and 38) were removed because of low threshold of acceptability, and one item loaded on two factors (i.e., item 17 for AM and SAM).

**Table 2.** Factorial results of the SAMSAQ-EU questionnaire.

	Questions	Factor		
		AM	SAM	CAM
1.	I am confident that I can achieve a high grade point average this year.	.68		
2.	Achieving a high level of performance in my sport is an important goal for me this year.			
3.	It is important to me to learn what is taught in my courses.	.78		
4.	I am willing to put in the time to earn excellent grades in my courses.	.8		
5. <sup>b</sup>	The most important reason why I am in school is to play my sport.	.4		
6. <sup>b</sup>	The amount of work required in my courses interferes with my athletic goals.			.48
7.	I will be able to use what is taught in my courses in different aspects of my life outside of school.	.68		
8.	I chose to play my sport because it's something I'm interested in as a career.			
9. <sup>b</sup>	I have some doubt about my ability to be a star athlete on my team.			
10.	I chose (or will choose) my major because it is something I am interested in as a career.	.57		
11.	Earning a high grade point average is not an important goal for me this year.			.56
12.	It is important to me to learn the skills and strategies taught by my coaches.		.49	
13.	It is important for me to do better than other athletes in my sport.			
14.	The time I spend engaged in my sport is enjoyable to me.		.56	
15.	It is worth the effort to be an exceptional athlete in my sport.		.4	
16. <sup>b</sup>	Participation in my sport interferes with my progress towards earning a college degree.			.54
17. <sup>a,b</sup>	I get more satisfaction from earning an "A" in a course toward my major than winning a game in my sport	.39	-.34	
18.	During the years I compete in my sport, completing a college degree is not a goal for me.			.4
19.	I am confident I can be a star performer on my team this year.			
20.	My goal is to make it to the professional level or the Olympics in my sport.			
21. <sup>b</sup>	I have some doubt about my ability to earn high grades in my courses.			.65
22.	I am confident that I can make it to an elite level in my sport (Professional/Olympics).		.59	
23.	I am confident that I can earn a college degree.	.59		
24.	I will be able to use the skills I learn in my sport in other areas of my life outside of sports.		.61	
25. <sup>b</sup>	I get more satisfaction from winning a game in my sport than from getting an "A" in a course toward my major.		.46	
26. <sup>a,b</sup>	It is not important for me to perform better than other students in my courses.			.57
27.	I am willing to put in the time to be outstanding in my sport.		.71	
28.	The content of most of my courses is interesting to me.	.8		
29. <sup>b</sup>	The most important reason why I am in school is to earn a degree.	.62		
30.	It is not worth the effort to earn excellent grades in my courses.			.59
31. <sup>c</sup>	Within an academic environment, I find it more challenging to face difficult tasks.	.48		
32. <sup>c</sup>	For me studies are important to achieve knowledge and skills.	.76		
33. <sup>c</sup>	For me, it is important to train seriously to improve my performance.		.73	
34. <sup>c</sup>	The achievement of a degree is important to enrich my knowledge.			
35. <sup>c</sup>	In sport, I find stimulating those situations requiring high performances and being difficult to perform.		.72	
36. <sup>c</sup>	Situations that allow me to test my capacities stimulate me.		.58	
37. <sup>c</sup>	Difficult situations bother me.			
38. <sup>c</sup>	For me it's important not to make mistakes			
39. <sup>c</sup>	It's important for me to obtain a degree because it will help me to find a job.	.63		
	<b>Cronbach's Alpha</b>	.90	.75	.75

<sup>a</sup>absent in SAMSAQ (Gaston-Gayles, 2005).

<sup>b</sup>absent in SAMSAQ-IT/A (Guidotti and Capranica, 2013).

<sup>c</sup>implemented in SAMSAQ-IT/A (Guidotti and Capranica, 2013)

The acceptability of the sample was verified by KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) which showed the sufficient value of 0.74, implicating that the acceptability of the sample is appropriate. At the same time the adequacy of the collected replies, considering the importance of the research, can be confirmed with the statistical significance of the Bartlett's sphericity test ( $p \leq 0.01$ ).

For AM, Slovenian athletes reported higher ( $p = 0.013$ ) values ( $3.80 \pm 0.76$  pt) when compared with their Italian counterparts ( $3.11 \pm 0.52$  pt), whereas no significant differences emerged for SAM (Italians:  $4.81 \pm 1.03$  pt; Slovenians:  $5.00 \pm 0.99$  pt) and CAM (Italians:  $3.27 \pm 0.30$  pt; Slovenians:  $3.51 \pm 0.43$  pt). Regarding gender comparisons, no difference was found for AM (females:  $3.69 \pm 0.77$  pt; males:  $3.35 \pm 0.54$  pt), SAM (females:  $4.91 \pm 1.01$  pt; males:  $4.91 \pm 0.99$  pt), and CAM (females:  $3.44 \pm 0.44$  pt; males:  $3.37 \pm 0.32$  pt).

#### External factors

For the athletic aspects, the majority (77.2%) of the Italian participants declared a professional athletic status, whereas the majority (60.6%) of the Slovenian athletes declared to be amateur or non-professional athletes ( $p < 0.001$ ). During the most intensive part of the season, Slovenian athletes declared a higher ( $p = 0.005$ ) number of training hours ( $20.4 \pm 6.4$  hr.week-1) when compared with their Italian counterparts ( $17.4 \pm 5.5$  hr.week-1). No difference between countries was found for the time of driving to and from the training venue (Italians:  $1.2 \pm 1.4$  hr; Slovenians:  $1.6 \pm 0.8$  hr).

Regarding university education, 9.1% of the Italian and 28.9% of the Slovenian athletes obtained a university degree. The majority of the respondents were upper secondary school students (Italians: 72.7%; Slovenians: 57.8%), with a low proportion attending short-cycle colleges or professional colleges (Italians: 18.2%; Slovenians: 13.3%). During their active sport careers, Slovenian athletes were more ( $p < 0.001$ ) engaged in education (66.7%) than their Italians counterparts (19.3%). Sport career determined school dropouts starting at high school level (Italians: 8.7%; Slovenians: 9.1%), and more frequently at higher level of education (Italians: 28.3%; Slovenians: 54.5%). However, athletes also declared that they decided not to pursue a higher degree due to other reasons (Italians: 23.9%; Slovenians: 18.2%), not necessarily related to sports (Italians: 39.1%; Slovenians: 18.2%). In general, Italian respondents reported to have "very little" (18.2%) or "some" (72.7%) problems in coordinating sport and academic careers, whereas the majority of the Slovenian respondents (57.7%) reported "some" (37.8%), "many" (11.1%), and to "too many" (8.8%) problems, despite there being no difference between countries for this parameter (Italians:  $2.7 \pm 0.9$  pt; Slovenians:  $2.8 \pm 1.0$  pt).

In terms of psycho-social aspects, the majority of Italian (98.2%) and Slovenian (78.8%) athletes mostly

come from towns with less than 10,000 inhabitants ( $p = 0.02$ ). For the educational level of the parents, the majority of Slovenian fathers (68.3%) and mothers (78.8%) had a high level degree, whereas the comparative picture for Italian parents was 38.6% and 45.6% for fathers and mothers, respectively ( $p < 0.001$ ). Finally, regarding external influences in choosing their sport, the majority of Italian athletes highlighted the role of their family members (Parents: 47.4%; Siblings and Relatives: 14.0%) and coaches (10.5%) with 28.1% of an autonomous choice, whereas 48.5% of the Slovenian respondents chose their sport, with family members playing a relevant role (Parents: 21.2%; Siblings and Relatives: 24.2%). For the financial aspects, the eventual benefits of monthly incomes, scholarships and premiums were more positively perceived ( $p < 0.001$ ) among the Italian athletes ( $3.9 \pm 0.9$  pt) than among their Slovenian counterparts ( $2.8 \pm 1.5$  pt).

Table 3 shows the correlation between the three internal factors of the SAMSAQ-EU and the nine external factors investigated in this study. No significant correlation emerged for SAM, whereas CAM showed a positive relationship with problems in combining academic and sport careers ( $r = 0.32$ ,  $p = 0.015$ ), and AM showed positive relationships in relation to gender ( $r = 0.20$ ,  $p = 0.03$ ) and father's education ( $r = 0.26$ ,  $p = 0.004$ ), and negatively correlated with current academic status ( $r = -0.46$ ,  $p < 0.01$ ).

**Table 3.** Two-way connection of individual variables.

		AM	SAM	CAM
<b>Internal Factors</b>	AM	1		
	SAM	.003	1	
	CAM	.037	.002	1
<b>External Factors</b>	Sports discipline	.098	.032	-.081
	Training hours per week	-.045	.108	.000
	Time to training	.074	.125	.136
	Current schooling status	-.455**	.138	.066
	Problems in sport/academic career	-.229	-.045	.324*
	Living town dimension	.030	-.058	-.080
	Father's education	.258**	.049	.050
	Mother's education	.173	.115	-.004
	Parental direction into sports	-.048	.057	-.001

\* $p \leq 0.05$ , \*\*  $p \leq 0.01$  levels of correlation significance.

## Discussion

Considering that both Italy and Slovenia present no structural legal basis in the area of educational services

for top athletes at higher level of education [Aquilina, Henry 2010; Henry 2013], logically no particular difference between Slovenian and Italian athletes could be expected. Conversely, the main findings of this study supported the relationship between the personal motivation towards DC and a variety of other contextual variables in Italian and Slovenian winter sports (e.g., cross-country skiing, ski jumping and biathlon) athletes. In line with the experimental hypotheses, differences between countries in internal and external factors of DC emerged, with internal factors distinctly related to external ones. In particular, the confirmed three-factorial model of the SAMSAQ-EU proved a discriminatory capability between winter sports athletes of different countries adopting a Laissez-faire/No Formal Structures for DC, whereas the analysis of external factors allowed a deeper understanding of the relationship between the athletes' motivation towards DC and the role of a supportive environment.

Regarding the three-factor structure of the athletes' motivation towards DC, only AM presented a difference between countries, with Slovenian athletes showing higher values compared with their Italian counterparts. These findings confirm a previous study on Italian and Slovenian athletes of different disciplines, mirroring the higher motivation of Slovenian athletes to engage in academic careers [Lupo *et al.* 2012].

Although distinct DC paths have been reported in the literature, especially for individual sports athletes [Baron-Thiene, Alfermann 2015], in this study no gender related-difference emerged, probably due to the traditionally high achievements and wide recognition of Italian and Slovenian winter sports female and male athletes. Despite their strong winter sport tradition and a lack of DC structures in place, Italy and Slovenia present other demographical, educational, sports, socio-cultural and economical differences, which were demonstrated to be particularly relevant in affecting winter athletes' motivations towards DC. In particular, the Italian participants tended to have a professional athletic status, which might have affected their lower AM and educational level compared to their Slovenian counterparts. Specifically, Italian elite athletes could be recruited early in the Italian army, which provides a salary during their athletic career and could ensure a future military career [Frapiccini 2008]. Conversely, Slovenian athletes might consider a university degree crucial for future entrance in the labour market in absence of a financial income as a professional athlete to be capitalized for future life. Consequently, the Slovenian athletes reported a significant engagement in higher education despite a high difficulty in combining sport and education, also due to a higher sport commitment for training and competitions compared to their Italian counterparts.

In investigating predictors for dual career in adolescent German athletes, Baron-Thiene and Alfermann

[2015] have reported that German adolescent winter sports athletes were particularly at risk of DC due to the environmentally constrained training facilities that make it more difficult to combine sports with education. This aspect was considered particularly relevant in this study because a high proportion of the participants were attending upper secondary school, meaning that that winter sports athletes compete at elite level during their adolescence. Actually, the present findings showed academic dropouts due to sports commitment occur more often at university level. In addition to a higher presence of high schools in towns close to winter sports facilities, Italy and Slovenia organise sports high schools, which ensure adjustments in favour of elite secondary school athletes. Instead, the limited proximity of universities and training sites and a lack of DC policies at Italian and Slovenian higher educational level determine increases in travel time and low attendance to classes, thus making it difficult for winter sports athletes to continue their education. Furthermore, the positive relationship between CAM and problems in combining academic and sport careers indicates that DC challenges actually motivate athletes to fulfil their perspective sport career, probably perceiving that their transition from sport to labour market will not occur in the near future [Lupo *et al.* 2012].

Positive emotional, financial and social parental support and encouragement is deemed crucial to the athlete's motivation and success in combining sport and education, whereas negative parental attitudes might put athletes at risk of psychosocial challenges, and sport or academic dropouts [Wylleman *et al.* 2000]. The positive relationship between the athletes' AM and their fathers' level of education substantiates the paternal role as strong facilitators of the athlete's academic investments [Ryba *et al.* 2015; Tekavc *et al.* 2015; Wylleman *et al.* 2000] and provides additional evidence on the effects of parental educational level on the educational attainment of their children [Dubow *et al.* 2009]. In fact, the majority of Slovenian parents have a high education degree and have a limited influence in the athlete's decision towards sports, which might facilitate the high involvement of Slovenian athletes in higher education. Conversely, not having a university degree and playing a relevant role in supporting the sport involvement of their progeny, the majority of Italian parents might influence the youth athlete's decision to prioritize their professional opportunities through sports, especially when the training, competition and academic demands increase significantly and might conflict.

These findings emphasise the need of a specific DC parenting education for fully developing a positive role for DC decisions of their children, especially at the end of the high school when elite athletes are at risk of terminating their education. These programmes should aim to help parents understanding and managing their roles in DC of talented and elite athletes, and to proactively

develop and utilize a range of intrapersonal, interpersonal and organizational skills and coping strategies to ensure an appropriate DC parental support.

## Conclusions

The present analyses of the internal factors indicate that the DC motivation of student-athletes' is a rather complex phenomenon, even in countries included in the same DC policy category [Aquilina, Henry 2010; Lupo *et al.* 2012], whereas the analysis of the external factors related to DC expand our knowledge of the unique determinants of DC paths in winter sports; this is especially crucial during late adolescence to develop the athletes' achievement-oriented attitudes for academic and sports success.

The findings confirmed the SAMSAQ-EU as a valuable tool to discriminate European student-athletes' motivation towards dual career [Lupo *et al.* 2015], being also sensitive to specific social contexts of countries classified into the same political category in terms of institutional dual career support [Aquilina, Henry 2010; Henry 2013]. Indeed, the relevant differences in Europe sports, academic, and socio-cultural systems represent an important area of research on determinants of DC, and to foresee possible strategy to support talented and elite athletes in combining sport and education [European Commission 2012]. Furthermore, in highlighting the crucial role of parents in the holistic development of their children, this study confirmed the need for specifically tailored DC parenting education programmes, which will empower them to effectively provide DC support for athletes as students.

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## **Motywacja w karierze sportowej i akademickiej najlepszych słoweńskich i włoskich sportowców uprawiających sporty zimowe: rola czynników wewnętrznych i zewnętrznych**

Słowa kluczowe: polityka równoległej kariery sportowej, sportowcy uprawiający sporty zimowe, czynniki motywacyjne, SAMSAQ-EU, systemy szkolne

### **Streszczenie**

Tło i cel. Biorąc pod uwagę brak strukturalnych środków na prowadzenie równoległej kariery sportowej i akademickiej we Włoszech i Słowenii, celem niniejszego badania była ocena czynników wewnętrznych (np. motywacji do sportu i edukacji) i zewnętrznych (np. sportowych, akademickich, psychospołecznych i finansowych) sprzyjających podejmowaniu równoległej kariery (DC) wśród najlepszych włoskich i słoweńskich sportowców zimowych.

Metody. Europejski Kwestionariusz Motywacji Sportowych i Naukowych Studentów-Sportowców (SAMSAQ-EU) i kwestionariusz informacyjny przedstawiono 123 najlepszym włoskim (n = 57, kobiety: n = 16, mężczyźni: n = 41) i słoweńskim (n = 66 kobiety: n = 31, mężczyźni: n = 35) sportowcom. Główna metoda ekstrakcji czynnikowej i metody normalizacji rotacji Varimax/Kaisera określiły model trójczynnikowy SAMSAQ-EU (np. motywacja sportowa studenta, motywacja akademicka, motywacja kariery sportowej). Zastosowano jednokierunkową analizę wariacji ANOVA i macierz korelacji ( $p \leq 0,05$ ) do stwierdzonych różnic między krajami i zależności między zmiennymi wewnętrznymi i zewnętrznymi.

Wyniki. W przypadku czynników wewnętrznych różnica ( $p = 0,013$ ) między krajami pojawiła się tylko w przypadku motywacji sportowej (AM), z najwyższymi wartościami ( $3,80 \pm 0,76$ pt) dla Słoweńców i najniższymi dla Włochów ( $3,11 \pm 0,5$  pt), niezależnie od płci. Stwierdzono związek ( $p \leq 0,01$ ) między motywacją sportową a aktualnym statusem nauki szkolnej i wykształceniem ojca oraz motywacją do kariery sportowej (CAM) a problemami w karierze sportowej/akademickiej.

Wnioski. Wyniki wskazują, że krajowe systemy społeczno-kulturowe wpływają na motywację sportowców do prowadzenia równoległej kariery sportowej i naukowej, a rodzice odgrywają istotną rolę w wyborze takiego rodzaju kariery. Badanie to potwierdziło potrzebę specjalnie dostosowanych programów edukacyjnych dla rodziców, które umożliwią im skuteczne zapewnienie wsparcia dla sportowców będących jednocześnie studentami.