Baltic Journal of Health and Physical Activity 2017;9(4):135-146
Journal of Gdansk University of Physical Education and Sport in Gdansk
e-ISSN 2080-9999

ORIGINAL

The importance of the type of sport and life experience in the dual career in elite sport based on the analysis of Poland

Authors' Contribution:
A Study Design
B Data Collection
C Statistical Analysis
D Data Interpretation
E Manuscript Preparation
F Literature Search
G Funds Collection

Marek Graczyk[1 ABDFG], Paul I. Wylleman[2 ABFG], Anna Nawrocka[1 DEF], Paweł A. Atroszko[3 CDE], Waldemar Moska[1 BG], Tomasz Tomiak[1 BG], Hubert Krysztofiak[4 BG]

[1] Gdansk University of Physical Education and Sport, Gdansk, Poland
[2] Vrije Universiteit, Brussels, Belgium
[3] University of Gdansk, Gdansk, Poland
[4] Department of Applied Physiology, Mossakowski Medical Research Centre PAS, Warsaw, Poland

abstract

Background The objective of this study is to check whether the type of sport is important for the development of the dual career in professional sport.

Material/Methods This study utilised the Chi-square test of the independence measurement model and student's T test. It also analysed 7 scenarios. A final survey-list consisted of the 38 items of competences and it was completed by 243 young people who took part in this study; the sample included 151 (67.7%) athletes training individual disciplines and 72 (32.3%) team disciplines.

Results The statistically significant results between the groups are in terms of competence (scenarios 3 and 6). There were no statistically significant differences between the groups in terms of life experience.

Conclusions Results in both parts of the study confirmed the three hypotheses. It turned out that the type of sport does not affect the course of the dual career in professional athletes.

Key words type of sport, life experience, elite sport

article details

Article statistics **Word count:** 5,293; **Tables:** 8; **Figures:** 0; **References:** 17

Received: September 2017; **Accepted:** December 2017; **Published:** December 2017

Full-text PDF: http://www.balticsportscience.com

Indexation: Celdes, Clarivate Analytics Emerging Sources Citation Index (ESCI), CNKI Scholar (China National Knowledge Infrastructure), CNPIEC, De Gruyter - IBR (International Bibliography of Reviews of Scholarly Literature in the Humanities and Social Sciences), De Gruyter - IBZ (International Bibliography of Periodical Literature in the Humanities and Social Sciences), DOAJ, EBSCO - Central & Eastern European Academic Source, EBSCO - SPORTDiscus, EBSCO Discovery Service, Google Scholar, Index Copernicus, J-Gate, Naviga (Softweco, Primo Central (ExLibris), ProQuest - Family Health, ProQuest - Health & Medical Complete, ProQuest - Illustrata: Health Sciences, ProQuest - Nursing & Allied Health Source, Summon (Serials Solutions/ProQuest, TDOne (TDNet), Ulrich's Periodicals Directory/ulrichsweb, WorldCat (OCLC)

Funding: This research was conducted within the framework of a research grant Project Erasmus DC GEES (Gold in Education and Elite Sport). About 80%, 624 639 Euro, of the project's total budget was funded by the EU. Prof. Paul Wylleman was scientific coordinator of GEES, Koen De Brandt was secretary of GEES and dr Marek Graczyk was national coordinator of GEES. Education Audiovisual and Culture Executive Agency is responsible for implementing the program Erasmus sport delegated by the European Commission.

Conflict of interest: Authors have declared that no competing interest exists.

Corresponding author: Dr Marek Graczyk, Department of Psychology, Gdansk University of Physical Education and Sport; Gorskiego 1, 80-336 Gdansk, Poland; phone: +48 58 5547269; e-mail: proasert@poczta.onet.pl

INTRODUCTION

Involvement in a sports career and education are a great challenge for an athlete. Great success in one area is often done at the expense of other areas, e.g. education. At the moment, there are studies showing that there is a positive and complementary nature of dual career paths. Therefore, the importance of understanding the basic areas related to the differences in the development of athletes' lives is highlighted. The paper presents the study protocol to search for new methodological and analytical methods that can extend the current understanding of how psychological and social processes are combined in the social development of adolescent athletes. It is worth noting that this development is based on certain skills and career aspirations. In many economically developed countries, it is expected of athletes to combine their careers in a two-way manner. This action is aimed at ensuring the use of life chances [1]. Involved participation in both areas is a very difficult task. A number of international studies indicate that very able and talented athletes who are committed to both sports and educational tasks struggle to achieve their potential capabilities at the same time in the two areas [2, 3, 4]. Elite career in sport is not long (retirement from sports begins between 30 and 35 years of age) and requires a lot of work and time to develop skills specific to sports. There is a tendency to set priorities for student-athletes. Educational systems create serious restrictions which in some ways make it difficult for athletes to combine the two areas (sports career and education) [5, 6, 7]. Sports career does not always work out successfully; it can also lead to accidents and injuries. The consequences can be unpleasant leading to adaptation disorders outside sport, life under severe stress, fear of the consequences and even pubertal disorders [2, 3, 8, 9]. It is therefore necessary to determine the supporting factors and the competencies indicated to help young people to combine sports with the academic career. Combining a sports career and education is currently a new area of activity in the science of sport and especially psychology, pedagogy, sociology, sports medicine and sports theory. It should teach athletes through training and wider education to develop their competencies and enable them to achieve high performance in sports and at the end of their sporting career to get satisfaction in professional and personal life, as the theory of transactional sport by P. Wylleman and N. Stambulova says [4, 10, 11].

Perhaps in the world of sport, physical exercise is not considered a major factor of success. Success in competitive sports is associated with a number of factors, such as physical skills, professional skills and, undoubtedly, life experience. In team sports, athletes are involved with the team. They spend many hours on practising with the team and have more interaction and collaboration with partners, as opposed to individual sports. Individual athletes spend much time on solitary practice. In some individual sports, an athlete has more time for practising mental skills and behaviours in a quiet environment, while distraction and loss of concentration are part of team sports. Sport psychologists indicate that there is a difference between the psychological profile of team sports and individual sports athletes. Authors found that athletes of individual sports have a higher level of preparation because they cannot rely on their team mates [12].

Every aspiring athlete faces a choice. The choice regards the discipline: individual or team. What can determine the choice? Perhaps the biggest

difference between team and individual sports is in what motivates athletes. In individual disciplines, such as running long distances, an athlete is responsible for his own strategy and is required to achieve individual success. In a group of sports, such as soccer, team members must cooperate with each other towards victory. Most people are familiar with and use the concept of internal and external motivation. Internal motivation is the drive to do something for its own sake, and the external one would be the opposite – doing something as a means to an end, as a reward or punishment [13].

Most studies in sports psychology show significant differences between athletes in individual and team sports in motivation. However, when it comes to the overall enjoyment and the optimal mental state, the type of sport does not seem to be affected. It was noted that the real satisfaction from the sport depends on each athlete's personal experience and competence 14]. Therefore, the following research questions have been posed:

1. Can a sports career be combined with education, regardless of the type of practiced sport?
2. Does the type of athlete's personal experience influence the choice of a dual career?
3. Does the athlete's development in dual career contribute to his/her holistic development?

Based on previous theoretical and empirical framework, it is hypothesized that:

(H1) Regardless of the type of sport, it is believed that athletes can combine their sport and educational careers.
(H2) Ability to connect a sports career and education depends on personal life experience and not on the presented type of sport.
(H3) To develop a holistic athlete important is the dual career in sport and not the kind of his/her motivation.

MATERIAL AND METHODS

SAMPLES

Two hundred forty-three young people took part in this study: including 161 (66.3%) athletes of individual disciplines and 82 (33.7%) of team disciplines, 105 women (43.2%) and 138 men (56.8%). Their mean age was M = 18.77 years (SD = 2.74). Four people did not report their age. The youngest person was 15 years old and the oldest one was 25 years old. The majority of the respondents (218 people, 89.7%) were continuing their education in secondary schools, while four people (1.6%) were continuing their schooling in higher education. 21 respondents (8.6%) already graduated from higher education. Among them, five persons (2.1%) were following a postgraduate programme and 16 people (6.6%) were not following any educational programme (Table 1).

Table 1. Description of participants' sex and education

	N	%
Female	105	43.2%
Male	138	56.8%
During secondary education	218	89.7%
During higher education	4	1.6%
Graduated from higher education	21	8.6%
During a doctoral study (PhD)	0	0.0%
During a postgraduate programme	5	2.1%
Not in any educational programme	16	6.6%

222 people (90.5%) were practicing a sport that is performed at the Summer Olympic Games. 16 people (6.6%) were practicing a non-Olympic and non-Paralympic sport. 7 people (2.9%) were practicing a sport that is performed at the Winter Olympic Games .The majority of the respondents (151 people, 67.7%) were practicing individual sport. Less than 2% of the participants have taken part in the Olympics Games. On the other hand, more than 10% of the participants have taken part in the World Cup, the World Grand Prix or the World Tour, while 48.1% have taken part in the National Competition or the National Cup. The majority of the respondents (207 people, 85.2%) have taken part in regional competitions (Table 2).

Table 2. Sport categories

	Female	Male	Total
A non-Olympic / non-Paralympic sport	9 (8.6%)	7 (5.1%)	16 (6.6%)
A sport that is performed at the Summer Paralympic Games	0 (0%)	0 (0%)	0 (0%)
A sport that is performed at the Winter Paralympic Games	0(0%)	0(0%)	0(0%)
A sport that is performed at the Summer Olympic Games	94 (89.5%)	126 (91.3%)	220 (90.5%)
A sport that is performed at the Winter Olympic Games	2 (1.9%)	5 (3.6%)	7 (2.9%)
Individual	64 (68.1%)	87 (67.4%)	151 (67.7%)
Team	30 (31.9%)	42 (32.6%)	72 (32.3%)
Olympic Games	2 (1.9%)	2 (1.4%)	4 (1.6%)
Youth Olympic Games (YOG)	10 (9.5%)	5 (3.6%)	15 (6.2%)
World Cup, World Grand Prix, World Tour	17 (16.2%)	18 (13.0%)	35 (14.4%)
World Championship junior / youth (U23, U21, U19, U18, U17, U16)	26 (24.8%)	25 (18.1%)	51 (21.0%)
World Championship senior	8 (7.6%)	11 (8.0%)	19 (7.8%)
European Youth Olympic Festival (EYOF)	8 (7.6%)	7 (5.1%)	15 (6.2%)
European Championship junior/youth (U23, U21, U19, U18, U17, U16)	34 (32.4%)	45 (32.6%)	79 (32.5%)
European Cup / Tour	18 (17.1%)	23 (16.7%)	41 (16.9%)
European Championship senior	13 (12.4%)	11 (8.0%)	24 (9.9%)
National competition/cup	56 (53.3%)	61 (44.2%)	117 (48.1%)
National competition/cup junior/youth (U23, U21, U19, U18, U17, U16)	90 (85.7%)	108 (78.3%)	198 (81.5%)
Regional competition/cup	90 (85.7%)	117 (84.8%)	207 (85.2%)

The majority of the respondents (164 people, 67.5%) were living at their parents' home. Less than 20% of the participants were living at guest family (39 people, 16.0%), while less than 10% of the participants at boarding school (24 people, 9.9%), rented or owned flat or house (13 people, 5.3%), and student accommodation (not in a boarding school) (3 persons, 1.2%) (Table 3).

Table 3. Participants' living place

	Female N (%)	Male N (%)	Total N (%)
Parents home	67 (63.8%)	97 (70.3%)	164 (67.5%)
Guest family	17 (16.2%)	22 (15.9%)	39 (16.0%)
Boarding school	12 (11.4%)	12 (8.7%)	24 (9.9%)
Flat/house (rented or owned)	7 (6.7%)	6 (4.3%)	13 (5.3%)
Student accommodation (not in a boarding school)	2 (1.9%)	1 (0.7%)	3 (1.2%)
	105 (100.0%)	138 (100.0%)	243 (100%)

MEASURES

The study was initiated in the framework of the Project Erasmus DC GEES (Gold in Education & Elite Sports). The project was started by P. Wylleman – the GEES scientific coordinator, K. De Brandy – the GEES Secretary and the national coordinator in Poland was M. Graczyk. The project aims to measure the level of competence and to determine what competencies are essential in the development and maintenance of a dual career in competitive athletes (measured quantitatively and qualitatively). It is worth remembering that a set of specific competencies creates a psychosocial and professional attitude.

Table 4. Competences

Competences
1. Ability to cope with stress in sport and study
2. Knowledge about your career options in study and sport
3. Ability to use setbacks in sport and/or study as a positive stimulus
4. Ability to resolve conflicts
5. Ability to put sport and study performances in perspective
6. Ability to make social contacts with peers in study and sport
7. Ability to live independently with competent life skills (e.g. cooking)
8. Ability to spend and manage your own money
9. Ability to adapt well to new situations
10. Ability to maintain relations with important others
11. Ability to negotiate (in order to stand up for your own interests)
12. Assertiveness (being self-assured and acting with confidence)
13. Asking advice of the right people at the right time
14. Eagerness to listen and learn from others and past experiences
15. Ability to collaborate with support staff in study and sport (e.g. coach, teacher, support provider...)
16. Understanding the importance of rest and recuperation
17. Being patient about the progression of your sport and study career
18. Ability to critically evaluate and modify your goals when needed
19. Ability to set realistic goals in sport and study
20. Ability to plan conscientiously in advance
21. Ability to use your time efficiently
22. Ability to regulate emotions in different situations
23. Ability to be flexible and change plans if necessary
24. Being prepared for the unexpected and having back up plans
25. Belief that study and sport can positively complement each other
26. Belief in your own ability to overcome the challenges in sport and study
27. Ability to create individualized routines (for sport and study)
28. Ability to focus on here and now, without being distracted
29. Vision of where you want to go in life after your dual career
30. Clear understanding of what it takes to succeed in sport and study
31. Willingness to make sacrifices and choices to succeed in sport and study
32. Ability to prioritize what needs to be done
33. Being curious to explore career plans outside elite sport
34. Awareness of your strengths, weaknesses and capabilities
35. Self-discipline to manage the demands of your study and sport combination (e.g. work independently without the supervision of others)
36. Ability to make your own responsible choices with regard to your study and sport career
37. Perseverance during challenging times and in the face of setbacks
38. Dedication to success in both sport and study

The first part of the study determined what competencies are important for high-performance athletes. For this purpose, a questionnaire of athletes' competence was developed in the Polish version. The next stage of the

study was to determine which scenario from seven available and presented by the researcher the athletes have experienced. It is worth noting that a better-balanced dual career in athletes can be extremely beneficial because it promotes the implementation of a new career after a sports career and secures the athlete's position. The development of a sports career involves interaction between personal development and challenges experienced by an athlete before, during and after the sports career.

In the first part of the survey, respondents were asked to indicate on a Likert scale to what extent (1–5) they feel that the statement is either of high or low intensity for them. In total, there were 38 items (Table 4).

The scenarios presented in the test consisted of the following 7 capabilities; subjects had to determine which of them they felt. Experiencing certain scenarios is associated with possessing specific competencies.

- Scenario #1: Are you going to start a difficult year in college – with exams which will take place in the decisive stage of the season. You want to succeed in both areas.
- Scenario #2: In connection with your (future) career, you want to find the best study plan and make the best choice of study to pursue in the future, both in sport and education.
- Scenario #3: Your sports competition and training schedule means that you will be leaving many days of learning and ongoing issues. You need to catch up during and/or after the competition/training camp.
- Scenario #4: You decide to leave home and family to participate in your sport or education. You need to adapt to a new social environment and cope with less family support.
- Scenario #5: You study and compete in sports, but suffer from an injury. Do you want to continue to learn and continue to compete at the end of rehabilitation.
- Scenario #6: Your coach does not support your decision to study and encourages you to concentrate exclusively on sport. Your goal is to combine the two disciplines.
- Scenario #7: (Optional: 18 years of age or more) While completing both your studies and sports competition, you do not have enough money to balance education and sport; you have to find a way to generate income.

As shown by previous studies, combining two areas – education and sports – is a difficult process [2, 3, 4, 15]. Previews are visible in the work of the researchers involved in this phenomenon (e.g. P. Wylleman and N. Stambulova). It requires programs and creating guidelines that have to support the implementation of the universal dual career development plan.

PROCEDURE

Professional athletes of both individual and team sports filled a questionnaire containing 38 items – competencies in an online version. The subjects had to mark which of them are relevant for the development of their future career. The next stage of the study was the choice of the scenarios that related personally to the subjects. There were 7 scenarios. Participation in the study was anonymous and no monetary or other material rewards were offered.

STATISTICAL ANALYSES

Means, standard deviations, percentages and correlation coefficients were calculated. Hierarchical regression analysis was conducted. Life experience was a dependent variable. Independent variables added in the first step were the type of sport and age. Benchmarks were set for subjective life experience on the mean score and standard deviation: the mean score, the mean score minus one standard deviation, and the mean score plus one standard deviation. Tests of significance of regression slopes at these benchmarks were conducted. All tests were two-tailed, and the significance level was set to $\alpha=0.05$. Unstandardized regression coefficients were reported. All statistical analyses were conducted in IBM SPSS 22.

ETHICS

Attaining formal and written informed consent from the Research Ethics Committee at the Psychology Department of Gdansk University of Physical Education and Sport was not regarded necessary, as voluntary completion of the questionnaires was considered as obtaining consent.

RESULTS

COMPETENCES

Participants who compete in team sport (M = 4.04, SD = 0.85) significantly more often declare the competence *Ability to use setbacks in sport and/or study as a positive stimulus* than participants who compete in individual sport (M = 3.66, SD = 1.08); $t(221) = -2.62$, $p = .01$. *Ability to make social contacts with peers in study and sport* was significantly more important for participants who compete in team sport (M = 4.42, SD = 0.71) than for participants who compete in individual sport (M = 4.12, SD = 0.88); $t(221) = -2.51$, $p = .013$. Participants who compete in team sport (M = 4.04, SD = 0.78) significantly more often declare the competence *Being patient about the progression of your sport and study career* than participants who compete in individual sport (M = 3.61, SD = 1.00); $t(221) = -3.23$, $p = .001$. Participants who compete in team sport (M = 4.11, SD = 0.76) significantly more often declare the competence *Belief that study and sport can positively complement each other* than participants who compete in individual sport (M = 3.65, SD = 1.05); $t(221) = -3.35$, $p = .001$. *Belief that study and sport can positively complement each other* was significantly more important for participants who compete in team sport (M = 4.29, SD = 0.81) than for participants who compete in individual sport (M = 3.92, SD = 1.02); $t(221) = -2.70$, $p = .008$. Participants who compete in team sport (M = 3.97, SD = 0.87) significantly more often declare the competence *Belief in your own ability to overcome the challenges in sport and study* than participants who compete in individual sport (M = 3.66, SD = 0.97); $t(221) = -2.30$, $p = .022$. Participants who compete in team sport (M = 4.22, SD = 0.63) significantly more often declare the competence *Dedication to succeed in both sport and study* than participants who compete in individual sport (M = 3.96, SD = 0.87); $t(221) = -2.28$, $p = .024$ (Table 5).

Table 5. Comparison of possession and importance of competences in participants who compete in individual sports and participants who compete in team sports

	Competences	Possession			p	Importance			p
		General	Individual	Team		General	Individual	Team	
1	Sum of Possession of all competences	148.72	147.23	151.51	ns	166.52	166.07	166.58	ns
2	Ability to cope with stress in sport and study	3.82	3.75	3.94	ns	4.64	4.67	4.57	ns
3	Knowledge about your career options in study and sport	3.88	3.87	3.93	ns	4.35	4.32	4.40	ns
4	Ability to use setbacks in sport and/or study as a positive stimulus	3.79	3.66	4.04	< 0.05	4.42	4.39	4.49	ns
5	Ability to resolve conflicts	3.93	3.89	3.97	ns	4.20	4.15	4.21	ns
6	Ability to put sport and study performances in perspective	3.90	3.87	3.99	ns	4.30	4.34	4.25	ns
7	Ability to make social contacts with peers in study and sport	4.11	4.08	4.17	ns	4.23	4.12	4.42	<0.05
8	Ability to live independently with competent life skills (e.g. cooking)	4.23	4.28	4.14	ns	4.46	4.45	4.43	ns
9	Ability to spend and manage your own money	4.01	3.99	4.01	ns	4.26	4.23	4.29	ns
10	Ability to adapt well to new situations	3.96	3.94	3.99	ns	4.36	4.34	4.42	ns
11	Ability to maintain relations with important others	4.05	4.01	4.11	ns	4.36	4.34	4.32	ns
12	Ability to negotiate (in order to stand up for your own interests)	3.79	3.79	3.79	ns	4.33	4.28	4.36	ns
13	Assertiveness (being self-assured and acting with confidence)	3.87	3.79	3.96	ns	4.38	4.35	4.42	ns
14	Asking advice to the right people at the right time	3.86	3.81	3.87	ns	4.30	4.28	4.31	ns
15	Eagerness to listen and learn from others and past experiences	4.11	4.07	4.21	ns	4.47	4.44	4.51	ns
16	Ability to collaborate with support staff in study and sport (e.g. coach, teacher, support provider…)	4.21	4.15	4.29	ns	4.61	4.60	4.61	ns
17	Understanding the importance of rest and recuperation	4.09	4.09	4.10	ns	4.65	4.68	4.60	ns
18	Being patient about the progression of your sport and study career	3.76	3.61	4.04	< 0.05	4.43	4.38	4.49	ns
19	Ability to critically evaluate and modify your goals when needed	3.93	3.85	4.07	ns	4.33	4.31	4.32	ns
20	Ability to set realistic goals in sport and study	3.94	3.95	4.00	ns	4.35	4.32	4.40	ns
21	Ability to plan conscientiously in advance	3.95	3.93	3.94	ns	4.37	4.38	4.31	ns
22	Ability to use your time efficiently	3.89	3.86	4.00	ns	4.44	4.48	4.39	ns
23	Ability to regulate emotions in different situations	3.64	3.60	3.72	ns	4.37	4.36	4.33	ns
24	Ability to be flexible and change plans if necessary	3.90	3.90	3.94	ns	4.32	4.28	4.33	ns
25	Being prepared for the unexpected and having back up plans	3.81	3.74	3.89	ns	4.27	4.21	4.35	ns
26	Belief that study and sport can positively complement each other	3.80	3.65	4.11	< 0.05	4.05	3.92	4.29	<0.05
27	Belief in your own ability to overcome the challenges in sport and study	3.76	3.66	3.97	< 0.05	4.51	4.52	4.51	ns
28	Ability to create individualized routines (for sport and study)	3.67	3.68	3.69	ns	4.09	4.08	4.10	ns
29	Ability to focus on here and now, without being distracted	3.77	3.71	3.93	ns	4.43	4.46	4.35	ns
30	Vision of where you want to go in life after your dual career	3.71	3.67	3.81	ns	4.42	4.46	4.39	ns
31	Clear understanding of what it takes to succeed in sport and study	3.98	3.94	4.08	ns	4.41	4.41	4.42	ns
32	Willingness to make sacrifices and choices to succeed in sport and study	4.05	4.03	4.07	ns	4.55	4.56	4.53	ns
33	Ability to prioritize what needs to be done	3.97	3.97	3.90	ns	4.38	4.42	4.24	ns
34	Being curious to explore career plans outside elite sport	3.74	3.80	3.64	ns	3.99	4.01	3.96	ns
35	Awareness of your strengths, weaknesses and capabilities	3.95	3.97	3.90	ns	4.49	4.50	4.43	ns
36	Self-discipline to manage the demands of your study and sport combination (e.g. work independently without the supervision of others)	3.97	3.93	4.03	ns	4.41	4.42	4.39	ns
37	Ability to make your own responsible choices with regard to your study and sport career	3.93	3.88	4.01	ns	4.41	4.44	4.31	ns
38	Perseverance during challenging times and in the face of setbacks	3.93	3.89	4.01	ns	4.60	4.61	4.57	ns
39	Dedication to success in both sport and study	4.06	3.96	4.22	< .05	4.58	4.56	4.60	ns

SCENARIOS

Scenario 3 (180 persons, 74.1%) and scenario 6 (185 persons, 76.1%) were the most commonly experienced in the group of participants who compete in individual and team sports. A Chi-square test of independence was calculated comparing the frequency of experience (scenarios from 1 to 7) in both groups. There were statistically significant differences between participants who compete in individual and team sport in experienced scenario 3, χ^2 (1, N = 243) = 1.42, p = .233; and scenario 6, χ^2 (1, N = 243) = 2.78, p = 0.095. Participants who compete in individual sports were more likely to experience scenario 3 (118 persons, 78.1%), and scenario 6 (122 persons, 80.8%) than participants who compete in team sports (accordingly 70.8%, and 70.8%) (Table 6).

Table 6. Comparison of experience of participants who compete in individual sports and participants who compete in team sports

Scenario	General		Individual		Team		Chi-square (df = 1)	p
	Not experienced	Experienced	Not experienced	Experienced	Not experienced	Experienced		
Scenario 1	132 (54.3%)	111 (45.7%)	80 (53.0%)	71 (47.0%)	41 (56.9%)	31 (43.1%)	0.31	.578
Scenario 2	144 (59.3%)	99 (40.7%)	85 (56.3%)	66 (43.7%)	49 (68.1%)	23 (31.9%)	2.81	.093
Scenario 3	63 (25.9%)	180 (74.1%)	33 (21.9%)	118 (78.1%)	21 (29.2%)	51 (70.8%)	1.42	.233
Scenario 4	152 (62.6%)	91 (37.4%)	100 (66.2%)	51 (33.8%)	34 (47.2%)	38 (52.8%)	7.34	.007
Scenario 5	144 (59.3%)	99 (40.7%)	97 (64.2%)	54 (35.8%)	39 (54.2%)	33 (45.8%)	2.08	.149
Scenario 6	58 (23.9%)	185 (76.1%)	29 (19.2%)	122 (80.8%)	21 (29.2%)	51 (70.8%)	2.78	.095
Scenario 7a	17 (68.0%)	8 (32.0%)	12 (70.6%)	5 (29.4%)	4 (57.1%)	3 (42.9%)	–	–

Note: [a] More than 20% cells in this row have the expected number in cell less than 5. The results of chi-square test may be incorrect.

There were not statistically significant differences between participants who compete in individual sports and those who compete in team sports as regards life experiences, χ^2 (6, N = 243) = 2.97, p = .813 (Table 7).

Table 7. Comparison of experience of participants who compete in individual sports and participants who compete in team sports

Sum of scenarios experienced (first 6)	General	Individual	Team	Chi-square (df = 6)	p
0	17 (7.0%)	7 (4.6%)	6 (8.3%)		
1	19 (7.8%)	12 (7.9%)	6 (8.3%)		
2	55 (22.6%)	36 (23.8%)	17 (23.6%)		
3	49 (20.2%)	32 (21.2%)	12 (16.7%)	2.97	.813
4	48 (19.8%)	30 (19.9%)	13 (18.1%)		
5	33 (13.6%)	22 (14.6%)	9 (12.5%)		
6	22 (9.1%)	12 (7.9%)	9 (12.5%)		

COMPETENCES INTO SCENARIOS

Among people who have experienced scenario 1, persons who compete in individual sports (M = 4.33) more often have *Being patient about the progression of your sport and study career* than persons who compete in team sports (M = 3.25). Among people who have experienced scenario 2, persons who compete in individual sports (M = 4.62) more often have *Willingness to make sacrifices and choices to succeed in sport and study* than persons who compete in team sports (M = 3.50). Among people who have experienced

scenario 3, persons who compete in individual sports (M = 4.29) more often have *Belief in your own ability to overcome the challenges in sport and study* than persons who compete in team sports (M = 3.38). Among people who have experienced scenario 4, persons who compete in team sports (M = 4.50) more often have *Dedication to succeed in both sport and study* than persons who compete in individual sports (M = 3.82). Among people who have experienced scenario 5, persons who compete in individual sports (M = 4.14) more often have *Ability to maintain relations with important others* than persons who compete in team sports (M = 2.83), while persons who compete in team sports (M = 4.75) have more often *Ability to create individualized routines (for sport and study)* than persons who compete in individual sports (M = 3.85) (Table 8).

Table 8. Comparison of competences and experience of participants who compete in individual sports and participants who compete in team sports

Scenario	Competences use	Possession		Competence use		p
		Individual (N)	Team (N)	Individual M (N)	Team M (N)	
Scenario 1	Being patient about the progression of your sport and study career	10	8	4.33 (3)	3.25 (4)	< .05
Scenario 2	Willingness to make sacrifices and choices to succeed in sport and study	38	15	4.62 (13)	3.50 (6)	< .05
Scenario 3	Belief in your own ability to overcome the challenges in sport and study	27	10	4.29 (21)	3.38 (8)	< .05
Scenario 4	Dedication to succeed in both sport and study	36	27	3.82 (11)	4.50 (16)	< .05
Scenario 5	Ability to maintain relations with important others	24	7	4.14 (22)	2.83 (6)	< .05
Scenario 6	Ability to create individualized routines (for sport and study)	17	7	3.85 (13)	4.75 (4)	< .05

DISCUSSION

The purpose of this study was to describe how the type of sport can affect the development of a dual career in high-performance athletes and whether it has any meaning. The studies are consistent with the assumptions of all the hypotheses and previous studies recognized in the literature [e.g. 14, 16]. Combining a sport career is possible in both types of sport. It mainly depends on the type of athletes' life experience, and it is worth noting that no differences between the groups were found. Both individual and group athletes have the same life experience which through various competencies leads them to the same purpose sports and education. Individual athletes are more patient when it comes to development and work on dual careers. They also have a considerable belief that they can overcome challenges and difficulties on the road to personal career. In contrast, team athletes are willing to make sacrifices to achieve success. Team athletes have the ability to create customized procedures for both science and sport, which makes them more flexible in operation but that does not mean that they are more effective, which essentially confirms the first hypothesis.

The type of athletes' motivation [13] is not important during the implementation of a dual career in young athletes. Regardless of their motivations the still have to strive for the goal. Some experience in life that is similar in both individual and team athletes is the key here, as confirmed by the second hypothesis in the study.

The strength of this study is undoubtedly the quantitative (questionnaire) and qualitative (focus groups) research. Focus research is possible especially when the group is homogeneous; however, in-depth interviews in individual cases lengthened the time of research and simultaneously made it more difficult to standardize the tools. It should also be emphasized that the selection of the target group was deliberate and it required athletes to have certain competencies. A dual career (combining sport and education or sport and work) is a good solution with regard to balancing sports and other areas of athletes' lives, preparing them for life after the end of their sports careers [4, 17]. Therefore, this confirms the third hypothesis. The need to pursue a dual career and to promote it among athletes has many benefits. It provides athletes with benefits related to health, e.g. balanced lifestyle, reduced stress levels, with development benefits, e.g. combining life skills, sports and education; it also has a positive impact on the process of self-regulation. Increased social benefits (the positive social effects of the complex systems of social support) of adaptation to life after sport prevents an identity crisis and provides better employment prospects, as a result of, among others, expanded education.

CONCLUSIONS AND LIMITATIONS

As far as the Authors are aware, the present study is the first to investigate the relationship between life experience and the type of sport in a dual career. To the Authors' knowledge, this is also the first study related to this topic which concerns a particularly large but fairly well defined in terms of demographics group in the society, mainly university professional athletes. Therefore, the paper adds to the existing literature. The instruments and measures used in the present study were standardized and showed adequate validity and reliability. One of the major limitations of the study was a relatively small sample of university students; therefore, the findings cannot be generalized to the population of students without some reservation. In addition, the design of this study was cross-sectional, and therefore it is not possible to draw reliable conclusions about cause and effect. Moreover, all test data are based on self-report, and the same result can be affected by typical method of error. Possible confounding variables associated with cognitive abilities (e.g. the level of intelligence), the family and social situation (e.g. financial status of the family, number of siblings, housing) were not controlled in this study. Future research should use longitudinal designs to control the more interfering variables and use more elaborate and appropriate measures to assess the directionality between the concepts.

ACKOWLEDGEMENTS

The research was conducted within the framework of a research grant PROJECT ERASMUS DC GEES (GOLD IN EDUCATION & SPORTS ELITE). About 80%, 624 639 Euro, of the project's total budget was funded by the EU. Education Audiovisual and Culture Executive Agency is responsible for implementing the program Erasmus sport delegated by the European Commission.

Prof. Paul Wylleman was the scientific coordinator of GEES, Koen De Brandt was the secretary of GEES and Dr Marek Graczyk was the national coordinator of GEES.

REFERENCES

[1] Ryba V, Tatiana Aunola K, Kalaja S, Selänne H, Ronkainen JN, Nurmi JR. A new perspective on adolescent athletes' transition into upper secondary school: A longitudinal mixed methods study protocol. Cogent Psychol. 2016;3:2-3. doi: org/10.1080/23311908.2016.1142412.

[2] Christensen MK, Sorensen JK. Sport or school? Dreams and dilemmas for talented young Danish football players. Eur Phys Educ Rev. 2009;15:115-133. http://dx.doi.:org/10.1177/1356336X09105214

[3] O'Neill M, Allen B, Calder AM. Pressures to perform: An interview study of Australian high performance school-age athletes' perceptions of balancing their school and sporting lives. Perform Enhanc Health. 2013;2:87-93.

[4] Stambulova NB, Engström C, Franck A, Linnér L, Lindahl K. Searching for an optimal balance: Dual career experiences of Swedish adolescent athletes. Psychol Sport Exerc. 2015;21:4-14.

[5] Aquilina D, Henry I. Elite athletes and university education in Europe: A review of policy and practice in higher education in the European Union Member States. Int J Sport Policy Politics. 2010;2:25-47. doi: 10.1080/19406941003634024.

[6] Brandão MRF, Vieira LF. Athletes' careers in Brazil: Research and application in the land of ginga. In: Stambulova N, Ryba TV, eds., Athletes' careers across cultures. 2013, 43-52.

[7] Cosh S, Tully PJ. "All I have to do is pass": A discursive analysis of student athletes' talk about prioritising sport to the detriment of education to overcome stressors encountered in combining elite sport and tertiary education. Psychol Sport Exerc. 2014;15:180-189. doi: 10.1016/j.psychsport.2013.10.015

[8] Baron-Thiene A, Alfermann D. Personal characteristics as predictors for dual career dropout versus continuation – A prospective study of adolescent athletes from German elite sport schools. Psychol Sport Exerc. 2015;21:42-49. http://dx.doi.org/10.1016/j.psychsport.2015.04.006.

[9] Cecić Erpič SC, Wylleman P, Zupančič M. The effect of athletic and non athletic factors on the sports career termination process. Psychol Sport Exerc. 2004;5:45-59. doi: 10.1016/S1469-0292(02)00046-8.

[10] Wylleman P, Lavallee D. A developmental perspective on transitions faced by athletes. In: Weiss M, editor. Developmental sport and exercise psychology: A lifespan perspective. 2014, 507-527.

[11] Wylleman P, Reints A, De Knop P. A developmental and holistic perspective on athletic career development. In: Sotiaradou P, De Bosscher V, eds. Managing high performance sport. 2013, 159-182.

[12] Cox RH, Liu Z, QiuY. Psychological skills of elite athletes. Int J Sport Psychol.1996;27:123-132.

[13] Vallerand RJ. Intrinsic and extrinsic motivation in sport and physical activity. Handbook of Sport Psychology: 2007;3:59-83.

[14] Jackson SA, Thomas PR, Marsh HW, Smethurst CJ. Relationships between flow, self-concept, psychological skills, and performance. J Appl Sport Psychol. 2001;13:29-153.

[15] Lally PS, Kerr GA. The career planning, athletic identity, and student role identity of intercollegiate student athletes. Res Q Exerc Sport. 2005;76:275-285. doi:10.1080/02701367.2005.10599299.

[16] Park S, Lavallee D, Tod D. Athletes' career transition out of sport: A systematic review. Int Rev Sport Exerc Psychol. 2013;6:22-53. http://dx.doi:org/ 10.1080/1750984X.2012.687053.

[17] DeLab Uniwersytet Warszawski, Ministerstwo Turystyki i Sportu (Włoch R, project manager). Kariera dwutorowa sportowców w Polsce. Diagnoza sytuacji. Raport z analizy danych zastanych oraz badań ilościowych i jakościowych [Dual career of athletes in Poland. A diagnosis of the situation. The report from the analysis of found data and qualitative and quantitative research]. 2015, 6-7. [retrieved from http://www.delab.uw.edu.pl/wp-content/uploads/2016/01/Kariera_dwutorowa_sportowcow_w_Polsce.pdf].

Cite this article as:
Graczyk M, Wylleman PI, Nawrocka A, et al. The importance of the type of sport and life experience in the dual career in elite sport based on the analysis of Poland. Balt J Health Phys Act. 2017;9(4):135-146.