



University of Physical Education in Kraków, Poland

# Studies in Sport Humanities

22

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Kraków 2017

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## From the Editor



*Studies in Sport Humanities* is a scientific journal that publishes original works on physical culture prepared on the basis of a multidisciplinary approach (including the perspectives of history, psychology, sociology, philosophy, cultural anthropology, Olympism, physical education theory, recreation and tourism theory, and management sciences).

The journal includes book reviews, polemics, conference proceedings and reports from other important scientific events. Detailed guidance for preparing texts, procedures for reviews and other editorial requirements are located in the publishing regulations.

The current, 22nd issue, consists of articles which analyze participation in sport from various perspectives. The reader will find research that discuss both positive consequences of exercise interventions on coping with stress, as well as the role of the supporting environment for the development of sports talent. Selected manuscripts refer to the organizational aspects of international sporting events such as the Olympic Games or the World Championships, ranging from economic factors and country/ city image to participant and observer perspectives.

The journal is published by the University of Physical Education in Kraków. The journal appears on list B of scientific journals promoted by the Ministry of Science and Higher Education. It is also indexed in the Index Copernicus international database. Since 2016, the journal has only been published in electronic version (open access). We warmly invite you to submit texts related to social studies and the humanities linked with the broadly understood notion of physical culture.

*Editor-in-Chief*

A handwritten signature in blue ink, which appears to read "Jan Blecharz". The signature is stylized and includes a horizontal line at the bottom.

*Associate Professor Jan Blecharz, Ph.D*



# Polish version of research based Model of Sport Talent Development Environment and adaptation of Talent Development Environment Questionnaire<sup>1</sup>

Małgorzata Siekańska, Agnieszka Wojtowicz

University of Physical Education in Cracow

## Summary

There is an increasing interest in optimizing sport talent development. One of the crucial factors that influence all talented athletes throughout their careers is the quality and the appropriateness of the coaching environment. Numerous research show that specific needs are associated with culture. The purpose of the study was to determine crucial factors of effective talent development environment and to adapt and verify psychometric properties of the Talent Development Environment Questionnaire (Martindale et al., 2010). In the group of 496 athletes (Mage=19.32, Nfemale=181, Nmale=315) analyses were conducted to adapt and verify psychometric properties of the scale measuring sport talent development environment. Factor analysis showed that in Polish context the six-factor model (loads from 0.35 to 0.67) was more suitable. The extracted factors were: Communication, Lack of Supporting Environment, Support Network, Individualized Approach to Athlete, Understanding the Athlete, Long-term Development Fundamentals. All factors were associated with self-efficacy and self-esteem of the athletes. The authors of the original model suggested that there could be context-specific requirements within a talent development, what was confirmed in this study. This is particularly important for practitioners, for whom the coach-athlete cooperation has international basis.

**Key words:** model of sport talent, sport talent development, talent development environment, social support

## Introduction

The concepts and models developed over the last forty years have shown a variety of approaches to talent development (Limont, 2010), including sport talent (Siekańska, 2013).

In following decades, some trends in conceptualisations and their models emerged.

Firstly, the approaches emphasising developmental aspects prevailed over those focused mainly on identification, however, it was highlighted that developmental pathways could be very individualized (Phillips et al., 2010b).

Therefore, due to changing context (historical, cultural, social) and the need to include new research findings, it is necessary to revise existing concepts and construct new models.

Sport talent is not only studied from a long-term perspective, but also as a multidimensional concept in-

cluding the role and influence of a broadly understood environment (Baker, Schorer, 2010). It is justified by the fact that sport champions do not develop in isolation. Elite competitors, on the one hand, benefit from their own resources and learnt skills, but on the other, they can access a strong support network such as family members, coaches, friends or team mates (van Rossum, 1995; Martindale, Collins, Abraham, 2007; Krane, Williams, 2010; Henriksen, Stambulova, Roessler, 2010; Burnetts, 2010).

One of the contexts of talent development is social environment, and it has been included in its contemporary models. The Differentiated Model of Giftedness and Talent (DMGT 2.0) is an example wherein the environment is one of two catalysts that influence the development of talent (Gagné, 2010; 2013). Environmental catalysis include three influences:

- *milieu* – the influence of social, cultural, economic (e.g., family's financial situation), and physical (e.g., climate, place of residence) environment;

<sup>1</sup> Projekt badawczy zrealizowany w ramach badań statutowych. Kierownik projektu: dr hab. Małgorzata Siekańska. Tytuł projektu: „Tłumaczenie i adaptacja Kwestionariusza Środowiska Sprzyjającego Rozwojowi Talentu w Sporcie KSSRTS (Talent Development Environment Questionnaire TDEQ)”. Numer projektu: 79/BS/INS/2015. Termin rozpoczęcia realizacji projektu: 01.01.2016 r. Termin zakończenia realizacji projektu: 31.12.2016 r.



- *individuals* – they play an important role in the development of talent e.g., parents and siblings, but also more distant family, teachers and trainers, peers, mentors and even public figures adopted as role models;
- *provisions* – particularly developed programmes and learning strategies (enrichment), and organizational structure (administrative services), e.g., interest groups to provide extracurricular or accelerative activities (to begin earlier and/or “jump” onto a more advanced placement programme).

The DMGT 2.0 design enables its application to different types of talents and groups of activities, besides sport. The model takes a number of factors that influence the process of talent development into account, and also their complex “choreography.” Based on the components of the DMGT 2.0 model, i.e. the *individuals* component, a new instrument was developed (Gagné, Gulbin, 2010). A cross-sectional, retrospective study of 673 Australian athletes from 34 sports disciplines and competing at various levels was conducted. It yielded preliminary data that were analysed for the contribution of *individuals* catalysts. The research also provided a lot of valuable information on the course and pace of sport talent development, as well on the circumstances that contributed to this development (e.g., family situation, environmental support). Parents are more engaged if their children train individual sports rather than team sports. The general atmosphere at home, achievement appreciation and parental modelling influence child’s achievements in sport and other areas (Gagné, Gulbin, 2010; Sacks, Tenenbaum, Pargman, 2006).

Environmental factors that benefit the development of sport talent have been studied by Martindale et al. (Martindale et al., 2005; 2010). Based on an existing literature review, experts’ opinion analysis and athletes’ experiences, the researchers developed the TDEQ (Talent Development Environment Questionnaire) – a 68-item instrument that was subjected to further psychometric procedure. Factor analysis identified 7 factors with satisfactory psychometric parameters, and distinguished 59 items.

The factors include:

- 1) Long-term development focus (24 items) – it offers the chance to succeed in sport in the long-term (as opposed to immediate success), shaping attitudes and skills associated with a specific lifestyle, responsibility for one’s own development and readiness to make sacrifices;
- 2) Quality preparation (5 items) – the proper conditions for training, recovery and participation in competition (see: deliberate practice), well-structured activities, goal setting, feedback etc., aiming at performance enhancement, but also prevention of burnout, overtraining or discouragement, etc.;
- 3) Communication (7 items) – the importance of effective communication with the coach both in formal and informal circumstances and its influence on the quality of a coach-athlete relationship, enhancing

athlete’s intrinsic motivation, effects of a coach-athlete collaboration;

- 4) Understanding the Athlete (4 items) – to what extent the coach knows and understands the athlete and whether they treat the athlete’s development holistically – taking various aspects of development into account (cognitive, physical, social, etc.) as well as individual differences (e.g., needs, goals, competence, expectations, sense of autonomy, etc.);
- 5) Support Network (8 items) – access to a wider, available and coherent support network to provide a variety of aids tailored to the needs and development of the athlete;
- 6) Challenging and Supportive Environment (4 items) – conditions for taking challenges and going out of one’s comfort zone but also readiness to provide support; progress appreciation and focus on development rather than on solely winning;
- 7) Long-Term Development Fundamentals (7 items) – opportunities to gain valuable experience and participate in diverse activities, engagement in decision-making concerning further development, enhancement of autonomous motivation, avoidance premature specialization and excessive parental involvement.

According to the authors of the TDEQ, the original version possesses good psychometric parameters to be used for scientific research, but also for individual diagnosis. Although the instrument was prepared in accordance with contemporary procedures, it is necessary to take culture-specific aspects into account.

In the light of existing research findings, new research on how to support talented athletes and develop instruments to better understand the role of particular catalysts, i.e. individuals and environmental ones, seemed justified and necessary. The TDEQ has been developed in response to a need to facilitate evidence-based practice (Martindale et al., 2010) and it has been used to understand the impact of the environment on developing athletes (e.g., Martindale et al., 2013; Wang et al. 2011; Ivarsson et al. 2015). It has been refined and translated into different languages (e.g., Li et al., 2018; Brazo-Sayavera et al. 2017). There is a need for a Polish version to help research and develop effective TDEQ in Polish contexts.

## Method

### Participants

The participants consisted of developing athletes – students recruited to sport schools or the University of Physical Education in Cracow. A total of 496 respondents (mean age = 19.32 +/- 2.67): 181 women and 315 men practicing individual sports (n = 210) and team sports (n = 286) such as volleyball, basketball, athletics, boxing, gymnastics, football swimming and others, took part in the study.

## Instruments

To determine the validity of the Polish version of the TDEQ, the following instruments were used in the study:

1. The Athlete Family Environment Questionnaire (KŚRS<sup>1</sup>) consisting of 83 statements about family and sport. A respondent indicates the statements concerning their family on a 5-point scale ("1" – I strongly disagree, to "5" – I strongly agree). The statements constitute the following nine scales (with a varied number of items): I. Socio-economic status; II. Good interpersonal relationships within the family; III. Children as an important value in family life; IV. Sport as an important value in family life; V. Engagement in child's training; VI. Genetic-environmental determinants of sport talent and passion; VII. Genetic-environmental determinants of professional achievement; VIII. Parental pedagogical skills; IX. Compensation factors.
2. The General Self-Efficacy Scale (GSE) (Schwarzer, Jerusalem, Juczyński 2008). The scale consists of 10 statements included in one factor and measures personal belief about the efficacy to cope with difficulties and obstacles. A respondent points to items using a 4-point scale: 1 – not, 2 – rather not, 3 – rather yes, 4 – yes.
3. The Rosenberg Self-Esteem Scale (SES) (adapted by Dzwonkowska, Lachowicz-Tabaczek, Laguna 2008). The scale is a one-dimensional, self-report instrument for evaluating individual self-esteem – a relatively constant disposition understood as a conscious attitude (positive or negative) towards the Self. It consists of 10 diagnostic statements. A respondent indicates how much they agree with the statements on a 4-point scale.
4. The TDEQ – a questionnaire designed to assess environmental factors that facilitate the development of sport talent (Martindale et al., 2010). The original version consists of 68 items, wherein 59 items constitute 7 scales, corresponding to the following factors: Long-term Development Focus (24 items), Quality Preparation (5 items), Communication (7 items), Understanding the Athlete (4 items), Support Network (8 items), Challenging and Supporting Environment (4 items), Long-term Development Fundamentals (7 items).

## Procedure

The TDEQ scale (Martindale et al., 2010) has been translated into Polish by two independent translators: a psychologist specializing in the field of psychological determinants of sport talent development, and an Eng-

lish native speaker<sup>2</sup>. All 68 items were translated and subjected to the factor analysis.

The TDEQ questionnaire and other psychological scales were applied in groups, also in the presence of the researcher's assistant. The study took about 45 minutes. The respondents were informed that the survey was anonymous and that the results would be used for research purposes only. All instruments contained written instruction, however, in case of the middle-school pupils, the instructions and questions were additionally read aloud by the experimenter's assistant.

## Statistical analyses

The analyses were performed using Statistica 12 and SPSS 21. The psychometric properties of the TDEQ PL scale were assessed by exploratory (EFA) and confirmatory factor analysis (CFA), and reliability and position analysis. The EFA was carried out due to the low reliability of the original scales. In order to determine the validity of the TDEQ PL, Pearson's correlation was used to determine the relation between the individual scaling factors and the relationships of the selected factors with other variables. The *t*-test was used in order to determine the differences between sexes and the difference between the type of sport practiced at the level of selected factors of the sport talent development environment.

## Results

### Psychometric properties of the TDEQ PL scale

Bartlett's spherical test ( $\chi^2=10890.57$ ;  $df=2278$ ;  $p<.001$ ) and the KMO coefficient = .92 showed heterogeneity of the variable arrays, which justified the use of factor analysis. The model with 6 factors matched the data best. The exploratory factor analysis with oblimin rotation showed that only 53 items out of 67 exceeded the set item loading level (item loading) of .35. Six items exceeded the accepted .35 value of loading in two factors and were assigned to that factor that loaded the item at a greater extent. Additionally, based on reliability analysis, the items 13 ("I struggle to get good-quality competition experiences at the level I require") and 41 ("I get the impression that my parents get frustrated if I lose") were removed from the final version, while item 51 was assigned to factor 2.

Based on the analyses, 52 items were assigned to six factors (Table 1) labelled: Communication, Lack of Supporting Environment, Support Network, Individualized Approach to Athlete, Understanding the Athlete, Long-term Development Fundamentals, with values above 1.0 (16.96, 2.53, 2.35, 2.26, 1.76, 1.59), explaining the

<sup>1</sup> KŚRS has been adapted from the Musician Family Environment Questionnaire (Sierszeńska-Leraczyk, 2008). The version used in the study meets all instrument requirements to be used for research purposes (Siekańska, 2012).

<sup>2</sup> The TDEQ (Martindale et al., 2010) translation and adaptation was performed upon the author's -R. Martindale- consent (e-mail dated June 28<sup>th</sup>, 2012)

**Table 1.** The TDEQ PL Subscales, Items, Factor Loadings in Confirmatory Exploratory Factor Analysis (EFA)

Factor 1 – Communication	Loading
28. My coach and I often try to identify what my next big test will be before it happens <i>28. Często staramy się z trenerem przewidzieć, jakie będzie moje kolejne wyzwanie</i>	.59
42. I regularly set goals with my coach that are specific to my individual development <i>42. Razem z trenerem regularnie formułujemy cele, które dotyczą mojego indywidualnego rozwoju</i>	.57
44. My coaches make time to talk to my parents about me and what I am trying to achieve <i>44. Moi trenerzy znajdują czas, by porozmawiać z moimi rodzicami o mnie i o tym co chcę osiągnąć</i>	.53
67. My progress and personal performance is reviewed regularly and on an individual basis <i>67. Moje postępy i osiągnięcia są regularnie omawiane w odniesieniu do indywidualnych kryteriów</i>	.47
60. My coach explains how my training and competition programme work together to help me develop <i>60. Mój trener wyjaśnia, w jaki sposób treningi i program zawodów pomagają w moim rozwoju</i>	.46
15. My coach takes my whole life situation into account when planning my programme <i>15. Planując program moich treningów trener bierze pod uwagę moją sytuację życiową</i>	.45
52. My coach often talks to me about the connections between different aspects of my training and how they overlap (e.g. technical, tactical, physical, and mental development) <i>52. Mój trener często rozmawia ze mną o tym, jaki jest związek między poszczególnymi elementami treningu (np. technicznymi, taktycznymi, fizycznymi oraz rozwojem psychicznym)</i>	.44
66. I often have the opportunity to talk about how more experienced performers have handled the challenges I face <i>66. Często mam możliwość porozmawiania o tym, jak bardziej doświadczeni zawodnicy radzili sobie z wyzwaniami, przed którymi stoję</i>	.43
48. My coaches talk regularly to other people who support me in my sport about what I am trying to achieve (e.g. physiotherapist, sport psychologist, nutritionist, strength and conditioning coach, lifestyle advisor) <i>48. Moi trenerzy regularnie rozmawiają z osobami, które mnie wspierają w sporcie (np. fizjoterapeutą, psychologiem sportowym, dietetykiem, trenerem przygotowania fizycznego i in.) na temat tego, co chcę osiągnąć</i>	.41
23. My coach and I regularly talk about things I need to do to progress to the top level in my sport (e.g. training ethos, competition performances, physically, mentally, technically, tactically) <i>23. Regularnie rozmawiamy z trenerem o tym, czego potrzebuję, aby robić postępy w rozwoju, które umożliwią mi osiągnięcie najwyższego poziomu w sporcie, który uprawiam</i>	.39
36. Feedback I get from my coaches almost always relates directly to my goals <i>36. Informacja zwrotna, którą otrzymuję od moich trenerów prawie zawsze odnosi się do moich celów</i>	.39
63. I am encouraged to keep perspective by balancing any frustrations I may have in one area with thinking about good progress in others (e.g. slow skill development but good strength gains or poor performances but good technical development) <i>63. Jestem zachęcany, by postrzegać frustrujące sytuacje w sposób wyważony i dostrzegać też pozytywne aspekty (np. powolny rozwój umiejętności ale też zadowolający przyrost siły; słabe wykonanie ale coraz lepsza technika)</i>	.38
Factor 2 – Lack of Supporting Environment	Loading
51. I feel pressure from my mates in sport to do things differently from what my coaches are asking of me <i>51. Moi sportowi koledzy wywierają na mnie presję, abym postępował inaczej niż oczekują trenerzy</i>	.37
35. My coach rarely talks to me about my well-being <i>35. Mój trener rzadko rozmawia ze mną o moim samopoczuciu</i>	.57
6. It is unusual to get specific training to teach us how to make good decisions under pressure <i>6. Rzadko się zdarza, aby uczono nas w ramach treningu jak podejmować właściwe decyzje w sytuacji presji</i>	.56
25. I do not often get any help from more experienced performers <i>25. Bardziej doświadczeni zawodnicy rzadko mi pomagają</i>	.54
32. I don't get much help to develop my mental toughness in sport effectively <i>32. Nie mam odpowiedniej pomocy, dzięki której mógłbym rozwijać swoją wytrzymałość psychiczną</i>	.51
17. My coach does not often mention mental skills, such as imagery, positive thinking, coping with disappointment, competition routines, goal setting, etc. <i>17. Rzadko odwołuje się do umiejętności psychicznych, np. wyobrażenia, pozytywne myślenie, sobie z rozczarowaniem, rutyna przedstartowa, formułowanie celów itd.</i>	.49
33. My coach rarely takes the time to talk to other coaches who work with me <i>33. Mój trener rzadko ma czas, by porozmawiać z innymi osobami, które ze mną pracują</i>	.49

31. The guidelines in my sport regarding what I need to do to progress are not very clear <i>31. Wskazania odnośnie tego, co mam robić, aby wiedzieć postęp w sporcie, który uprawiam, nie są dla mnie zbyt jasne</i>	.48
27. Developing performers are often written off before they have had a chance to show their real potential <i>27. Często młodzi rozwijający się zawodnicy zostają spisani na straty, zanim zdolają pokazać swój prawdziwy potencjał</i>	.44
19. My coach does not appear to be that interested in my life outside of sport <i>19. Mój trener nie wydaje się zbyt zainteresowany moim życiem poza sportem</i>	.42
47. I am not taught that much about how to balance training, competing, and recovery <i>47. Nie jestem uczony jak zachować równowagę między treningami, udziałem w zawodach i odpoczynkiem</i>	.41
9. I am rarely encouraged to plan how I would deal with things that might go wrong <i>9. Rzadko jestem zachęcany do tego, by planować co zrobić, jeśli coś pójdzie nie tak</i>	.41
<b>Factor 3 – Support Network</b>	<b>Loading</b>
62. My coaches and those that support me are good at helping me develop genuine confidence in myself (e.g. coaches, parents, psychologists, etc) <i>62. Trenerzy oraz osoby, które mnie wspierają (np. rodzice, psychologowie) skutecznie pomagają mi w budowaniu silnej pewności siebie</i>	.58
45. My parents are there to support me in many different ways if I need it (e.g. talk to me, financial, travel, organisation, emotional) <i>45. Moi rodzice wspierają mnie w różny sposób jeśli tego potrzebuję (np. rozmawiają ze mną, pomagają mi finansowo, podróżują ze mną, zajmują się sprawami organizacyjnymi, wspierają emocjonalnie)</i>	.54
65. My coaches and others who support me in sport are approachable (e.g. physiotherapist, sport psychologist, strength trainer, nutritionist, lifestyle advisor) <i>65. Moi trenerzy oraz inne osoby, które mnie wspierają w sporcie (fizjoterapeuta, psycholog sportowy, trener przygotowania siłowego, dietetyk i in.) są zawsze dostępni</i>	.53
46. I am encouraged to participate in other sports and/or cross-train <i>46. Jestem zachęcany do uprawiania różnych sportów i urozmaiconych treningów</i>	.49
55. There are people who help me/teach me how to deal positively with any anxieties or worries that I experience (e.g. coaches, parents, psychologists) <i>55. Są ludzie, którzy pomagają mi/uczają mnie jak sobie konstruktywnie radzić ze zdenerwowaniem i obawami, które przeżywam</i>	.47
57. On the whole, my mates (inside and outside of sport) are a positive support network for me <i>57. Ogólnie rzecz biorąc, moi rówieśnicy (w sporcie i poza sportem) stanowią ważną sieć wsparcia</i>	.43
3. If I got injured, I believe I would continue to receive a good standard of support <i>3. Wierzę, że gdybym doznał kontuzji dostałbym odpowiednie wsparcie</i>	.40
43. I am involved in most decisions about my sport development <i>43. Uczestniczę w podejmowaniu większości decyzji, które dotyczą mojego sportowego rozwoju</i>	.35
<b>Factor 4 – Individualized Approach to Athlete</b>	<b>Loading</b>
40. My training sessions are usually beneficial and challenging <i>40. Moje treningi są dla mnie wyzwaniem i przynoszą korzyści</i>	-.67
21. My development plan incorporates a variety of physical preparation such as fitness, flexibility, agility, coordination, balance, strength training, etc. <i>21. Plan mojego rozwoju obejmuje różne formy przygotowania fizycznego np. ogólną formę i sprawność, elastyczność, zwinność, koordynację, równowagę, trening siłowy</i>	-.66
11. Strength and condition training is specifically incorporated into my programme which helps me be strong and fit for my sport (e.g. weight training, press ups, sit ups, body work, circuits, etc.) <i>11. Specjalnie dobrany trening siłowy i kondycyjny (np. ćwiczenia siłowe, pompki, „brzuszek”, trening obwodowy itp.) są uwłączone do mojego programu treningowego, co mnie wzmacnia i pomaga osiągnąć odpowiednią sportową formę</i>	-.64
5. All the different aspects of my development are organized into a realistic timetable for me <i>5. Wszystko co dotyczy mojego rozwoju jest ujęte w realistycznym, z mojego punktu widzenia, planie dnia</i>	-.53
29. My training programmes are developed specifically to my needs <i>29. Mój program treningów jest dopasowany do moich potrzeb</i>	-.52
58. My training is specifically designed to help me develop effectively in the long-term <i>58. Mój trening jest specjalnie zaplanowany tak, by umożliwić mi długoterminowy rozwój</i>	-.45
10. My coach is good at helping me understand my strengths and weaknesses in my sport <i>10. Mój trener potrafi mi pomóc w zrozumieniu moich mocnych i słabych stron w sporcie, który uprawiam</i>	-.40

34. I have the opportunity to train with performers who are at a level to which I am aspiring 34. Mam możliwość trenowania z zawodnikami prezentującymi poziom, do którego aspiruję	-0.40
59. I spend most of my time developing skills and attributes that my coach tells me I will need if I am to compete successfully at the top/professional level 59. Większość czasu spędzam na rozwoju takich umiejętności i cech, których – zdaniem mojego trenera – będę potrzebował, jeśli chcę odnosić sukcesy w rywalizacji na najwyższym poziomie	-0.37
49. My coach plans training to incorporate a wide variety of useful skills and attributes, for example, techniques, physical attributes, tactical skills, mental skills, decision making 49. Mój trener planuje treningi kształtujące różne ważne umiejętności i cechy, np. umiejętności techniczne i taktyczne, cechy fizyczne, podejmowanie decyzji i umiejętności mentalne	-0.37
61. My coach allows me to learn through making my own mistakes 61. Trener pozwala mi uczyć się na własnych błędach	-0.36
41.* I get the impression that my parents get frustrated if I lose 41.* Odnoszę wrażenie, że moi rodzice są zawiedzeni gdy przegrywam	.36
<b>Factor 5 – Understanding the Athlete</b>	<b>Loading</b>
8. I can pop in to see my coach or other support staff whenever I need to (e.g. physiotherapist, psychologist, strength trainer, nutritionist, lifestyle advisor) 8. Mogę się zwrócić do mojego trenera lub innych osób jeśli potrzebuję (np. do fizjoterapeuty, i in.)	-0.61
12. My coach is good at helping me understand what I am doing and why I am doing it 12. Mój trener potrafi mi pomóc w zrozumieniu tego co robię i po co to robię	-0.48
30. Currently, I have access to a variety of different types of professionals to help my sports development (e.g. physiotherapist, sport psychologist, strength trainer, nutritionist, lifestyle advisor) 30. Mam dostęp do różnych specjalistów, którzy pomagają mi w rozwoju sportowym, np. fizjoterapeuty, psychologa sportowego, trenera przygotowania siłowego, dietetyka	-0.45
38. My coaches ensure that my school/university/college understands me and my training/competitions 38. Moi trenerzy zapewniają, by szkoła/uczelnia odnosiła się ze zrozumieniem do mojego udziału w treningach i zawodach	-0.42
26. Those who help me in my sport seem to be on the same page with each other when it comes to what is best for me (e.g. coaches, physiotherapists, sport psychologists, strength trainers, nutritionists, lifestyle advisors) 26. Osoby, które mnie wspierają w sporcie (trenerzy, fizjoterapeuci, psychologowie sportowi, dietetycy i in.) myślą podobnie, jeśli chodzi o to, co jest dla mnie najlepsze	-0.40
4. My school/college/university does not really support me in my sport when I need it 4. Nie mam odpowiedniego wsparcia ze strony szkoły/uczelni wtedy, kiedy tego potrzebuję	.37
7. My sports mates and I are told how we can help each other develop further in the sport 7. Ja i moi koledzy z klubu jesteśmy uczeni jak sobie nawzajem pomagać w dalszym rozwoju w sporcie	-0.36
<b>Factor 6 - Long-term Development Fundamentals</b>	<b>Loading</b>
53. I am constantly reminded that my personal dedication and desire to be successful will be the key to how good a performer I become 53. Otoczenie przypomina mi nieustannie, że moje poświęcenie i determinacja, by osiągnąć sukces są kluczowymi czynnikami, które zadecydują, jak dobrym zawodnikiem zostanę	-0.60
54. My coach emphasizes the need for constant work on fundamental and basic skills 54. Mój trener podkreśla potrzebę ciągłej pracy nad kluczowymi i podstawowymi umiejętnościami	-0.47
13.* I struggle to get good-quality competition experiences at the level I require 13.* Z trudem dążę do tego, by móc zdobywać doświadczenia w zawodach na odpowiednim dla mnie poziomie	-0.42
50. My coach actively develops my understanding of my sport development (e.g. technical, tactical, mental, physical, lifestyle, sport process) 50. Mój trener dba o to, abym rozumiał różne aspekty mojego sportowego rozwoju (np. techniczne, taktyczne, mentalne, fizyczne, styl życia, przebieg treningu)	-0.38

\* Items 41 and 13 were removed from the final version of the questionnaire.

40.36% total variance level. The reliability coefficient for individual scales ranged from .66 to .88 (Table 2).

Confirmatory factor analysis was performed to determine the proper fit of the adopted six-factor model. As indicated by Hoyle and Panter (1995), there is no gen-

were performed (Table 4). It was observed that the level of self-esteem and self-efficacy increased, as the level of Communication, Support Network, Individualized Approach to Athlete, Understanding the Athlete, Long-term Development Fundamentals and Lack of Support-

**Table 2.** The reliability coefficient for the TDEQ PL scales.

	The Cronbach's alpha reliability coefficient
Communication	.88
Lack of Supporting Environment	.79
Support Network	.71
Individualized Approach to Athlete	.83
Understanding the Athlete	.71
Long-term Development Fundamentals	.66

eral agreement among researchers which overall index is the most suitable, therefore, several different indicators are usually used. In this study, the six-factor model showed from satisfactory to good suitability (Hooper, Coughlan and Mullen, 2008):  $\chi^2(df=1310)=2859.69$ ,  $\chi^2/df = 2.18$ , RMSEA = .05, SRMR = .06, CFI = .78.

### Descriptive statistics and correlations

Correlation analyses of the selected factors yielded significant correlations between all scales (Table 3). In the case of Factor 2 (Lack of Supporting Environment), correlations with other factors were negative, whilst the relations among other factors were positive, thus, as the level of athlete's environment aspect increased, the level of other aspects increased as well.

Analyses of the correlations between selected determinants of sport talent development and self-esteem, self-efficacy and family environment factors and age,

ing Environment increased. The older the athletes were, the lower the levels of Support Network, Understanding the Athlete and Long-term Development Fundamentals.

Numerous correlations between all factors of TDEQ PL and the family environment were observed. Only in case of Factor 2 – Lack of Supporting Environment, were the correlations negative as the level of Good interpersonal relationships in the family raised, Children as an important value in the family life, Engagement in the child training, Genetic-environmental determinants of professional achievement, and Parental pedagogical skills raised, too, but there was a decrease in the level of lack of interest and commitment from the sport environment in athletes. For the other TDEQ PL factors, the correlations with the family environment were positive. It was found that as the socio-economic status increased, the level of Communication, Support Network, Individualized Approach to Athlete and Understanding

**Table 3.** Correlation coefficients for TDEQ PL scales

	TDEQ2	TDEQ3	TDEQ4	TDEQ5	TDEQ6
TDEQ1 (M=43.73 +/-10.01)	-.59**	.55**	.65**	.62**	.57**
TDEQ2 (M=41.91 +/-8.87)		-.40**	-.51**	-.54**	-.40**
TDEQ3 (M=34.03 +/-5.88)			.50**	.58**	.47**
TDEQ4 (M=48.79 +/-7.79)				.58**	.63**
TDEQ5 (M=27.89 +/-5.51)					.51**
TDEQ6 (M=13.60 +/-2.61)					-----

\*  $p < .05$ ; \*\*  $p < .01$

TDEQ1: Communication

TDEQ2: Lack of Supporting Environment

TDEQ3: Support Network

TDEQ4: Individualized Approach to Athlete

TDEQ5: Understanding the Athlete

TDEQ6: Long-term Development Fundamentals

the Athlete increased, too. On the other hand, the higher the level of Good interpersonal relationships in the family, the higher the levels of Support Network, Individualized Approach to Athlete and Understanding the Athlete. What is more, the greater the level of Sport as an important value in family life, the higher the level of Communication, Support Network, Understanding the

Athlete and Long-term Development Fundamentals. Similar correlations were observed in Genetic-environmental determinants of sport talent and passion, however, no significant correlation was found with Long-term Development Fundamentals.

It was also observed that as the level of Engagement in child training, Child as an important value in family

**Table 4.** Correlation coefficients of TDEQ PL scales and family environment factors, self-efficacy, self-esteem and age

	I	II	III	IV	V	VI	VII	VIII	IX	GSES	SES	AGE
TDEQ1	.15**	.09	.25**	.24**	.33**	.18**	.24**	.21**	.21**	.19**	.16**	.04
TDEQ2	-.05	-.11*	-.14**	-.05	-.13**	-.03	-.16**	-.11*	-.03	-.16**	-.17**	-.04
TDEQ3	.20**	.40**	.43**	.20**	.46**	.15**	.34**	.43**	.22**	.23**	.29**	-.15**
TDEQ4	.10*	.11*	.17**	.08	.17**	.03	.21**	.15**	.09*	.31**	.24**	-.02
TDEQ5	.17**	.19**	.28**	.20**	.35**	.13**	.22**	.30**	.20**	.13**	.16**	-.15**
TDEQ6	.07	.17**	.19**	.12**	.25**	.06	.23**	.23**	.16**	.18**	.14**	-.16**

\*  $p < .05$ ; \*\*  $p < .01$

I. Socio-economic status

II. Good interpersonal relationships in the family

III. Children as an important value in family life

IV. Sport as an important value in family life

V. Engagement in child training

VI. Genetic-environmental determinants of sport talent and passion

VII. Genetic-environmental determinants of professional achievement

VIII. Parental pedagogical skills

IX. Compensational factors

GSES: General self-efficacy

SES: Self-esteem

TDEQ1: Communication

TDEQ2: Lack of Supporting Environment

TDEQ3: Support Network

TDEQ4: Individualized Approach to Athlete

TDEQ5: Understanding the Athlete

TDEQ6: Long-term Development Fundamentals

**Table 5.** Differences between sexes in the level of environmental factors of sport talent development

	M <sub>F</sub>	M <sub>M</sub>	t	df	p	n <sub>F</sub>	n <sub>M</sub>	SD <sub>F</sub>	SD <sub>M</sub>	F Var.	p Var.
TDEQ1	45.13	42.96	2.25	463	.025	166	299	9.64	10.14	1.11	.472
TDEQ2	40.68	42.59	-2.22	458	.027	165	295	8.76	8.87	1.02	.876
TDEQ3	33.94	34.09	-.26	472	.798	171	303	6.11	5.75	1.13	.351
TDEQ4	48.73	48.83	-.12	458	.904	166	294	7.36	8.04	1.19	.213
TDEQ5	28.16	27.73	.81	469	.420	169	302	5.15	5.71	1.23	.141
TDEQ6	13.38	13.73	-1.43	486	.155	176	312	2.43	2.70	1.24	.119

TDEQ1: Communication

TDEQ2: Lack of Supporting Environment

TDEQ3: Support Network

TDEQ4: Individualized Approach to Athlete

TDEQ5: Understanding the Athlete

TDEQ6: Long-term Development Fundamentals

F: female, M: male



life, Genetic-environmental determinants of professional achievement, Parental pedagogical skills and Compensation factors increased, the level of all positive environmental factors increased as well, except for Lack of Supporting Environment.

### Differences between sexes and types of sports

Two statistically significant differences between sexes (Table 5) were observed. Female athletes reported a higher level of Communication than the male counterparts, while a lower level in Support Network factor was noted.

Two statistically significant differences were found between individual and team sports (Table 6). Communication was higher in team sports, but Support Network was lower.

and good reliability of TDEQ PL scales as well as its applicability for scientific purposes and for individual assessment of a competitor's environment.

The factors, which define an athlete's talent development environment, relate to supporting (5 factors) and negative aspects of the environment (1 factor). The identified factors are as follows:

Communication – refers to a coach's effective communication with persons working with a competitor (physiotherapist, sport psychologist, dietician, physical preparation trainer, etc.), as well as athlete's parents. The scale also includes aspects such as coach's communication with the competitor, discussion of their progress and setting goals, joint planning of the training programme, etc.

Lack of Supporting Environment – refers to a coach's behaviour showing lack of commitment and interest in supporting an athlete's development, and include: no time

**Table 6.** Differences between individual and team sports in environmental factors of sport talent development

	M <sub>ind.</sub>	M <sub>team</sub>	t	df	p	n <sub>ind.</sub>	n <sub>team.</sub>	SD <sub>ind.</sub>	SD <sub>team.</sub>	F Var.	p Var.
TDEQ1	45.74	42.31	3.80	452.3	<.001	193	272	8.76	10.60	1.46	.005
TDEQ2	40.94	42.62	-2.02	458	.044	195	265	8.62	8.99	1.09	.532
TDEQ3	33.82	34.19	-.68	472	.499	201	273	5.68	6.02	1.12	.383
TDEQ4	49.31	48.42	1.21	458	.226	194	266	7.40	8.06	1.19	.209
TDEQ5	27.44	28.21	-1.50	469	.135	198	273	5.34	5.63	1.11	.432
TDEQ6	13.50	13.68	-.72	486	.471	206	282	2.41	2.74	1.29	.051

TDEQ1: Communication

TDEQ2: Lack of Supporting Environment

TDEQ3: Support Network

TDEQ4: Individualized Approach to Athlete

TDEQ5: Understanding the Athlete

TDEQ6: Long-term Development Fundamentals

ind: individual sports, team: team sports

## Conclusions

The design and development of reliable measurement instruments is important both for cognitive (research) and practical (diagnosis) purposes. A better understanding of the optimal configuration of environmental factors offers the opportunity to plan such interactions that would not only enable broad and harmonious development of an athlete, but also help prevent undesirable behaviours, such as premature dropout from sport or burnout, even among young athletes (Cichosz, 2016). The TDEQ PL scale helps determine the extent and ways an athlete's sport environment supports their long-term development. In the Polish version of the tool, a six-factor structure was obtained. It seems significant that, apart from factors partly similar to the original version of TDEQ, a new negative factor clearly emerged in the Polish version - lack of support. The findings of the study confirm the sufficiently proper suitability of the six-factor model

to talk with an athlete and his/her network, no guidance on how to cope with pressure, lack of planning tactical solutions or setting goals, no support of physical training with mental training, lack of balance between sports and leisure activities.

Support Network – refers to the support received from the coach, family, peers and school environment, and the sense of security, including financial help in the event of difficulty (e.g., injury).

Individualized Approach to Athlete – refers to an approach that confirms training has been well-tailored to a particular athlete, including long-term development, learning a variety of skills and posing positive challenges. Understanding the Athlete – refers to the understanding of individual needs of an athlete by the coach and the learning environment (school/college), facilitating the combination of learning and competing in sports.

Long-term Development Fundamentals – refers to environmental fundamentals that are the base for long-term sport development, and understanding that success (in



the long-term) consists in making a sacrifice, determination and continuous work on skills, as well as understanding aspects inherent in sport development (e.g., technique, tactics, mental preparation, physical preparation, lifestyle, training).

The social environment of a gifted athlete significantly affects his/her path of development. This effect can be direct and indirect (Siekańska, 2013). Significant persons do not only decide on the pace and direction of the athlete's development, but they also play an important role in shaping mental durability in a young athlete via encouragement and support, reinforcing behaviours, and coping responses (Gucciardi, 2014; Gucciardi, Mallett, 2010). The results of research show that environmental factors of sports talent development are related to the development of personal resources such as self-esteem or self-efficacy. It was found that the level of athletes self-esteem and self-efficacy were positively correlated with the level of Communication, Support Network, Individualized Approach to Athlete, Understanding the Athlete, Long-term Development Fundamentals and Lack of Supporting Environment. This approach validates the adoption of a six-factor model, whereby five factors refer to the positive aspects of sport talent development environment, and one to the negative aspect. The findings also confirm that a democratic coaching style can be significantly beneficial to athletes in terms of increased self-efficacy and a higher self-esteem. These, in turn, may have the potential to motivate and support individual performance as well as an athlete's long-term sport development, but also prevent premature dropout from sport. Ntoumanis (2001) found that self-efficacy was positively correlated with intrinsic motivation, whereas Reinboth et al., (2004) found that the motivational climate (i.e. autonomy support, focus on improvement) introduced by the coach, was related to the well-being of athletes. Meta-analysis of motivational climate research carried out by Ntoumanis and Biddle (1999) indicated that mastery motivational climate, including an athlete's individual needs, was associated more with adaptive motivational patterns in athletes than performance climate.

The findings of the study showed that analysis of sport environment factors should also concern the type of sport, age and gender of athletes. It was found that females and males, but also individual and team athletes, differed in two factors of sport environment. Female athletes, more than those male, pointed to the fact that their coaches paid more attention to communication with them and other people supporting their development. In contrast, male athletes, more than the female ones, pointed to the negative aspects of the environment, lack of support and lack of communication. This confirms the favourable effect of stereotype of femininity stating that verbal communication is important for women, but at the same time, demonstrates a negative stereotype of masculinity. In work with men, little attention is focused on communication, relationship building or empathy. Rather emphasized are authoritative coaching and competition (Bird, 2003).

Similar differences were observed in the case of individual and team sports athletes. Athletes performing individually had more opportunities to discuss their progress and set goals than athletes from team sports. This is not surprising, as the coaches of team sports (e.g., football, volleyball) have to share their attention between a larger number of athletes than in individual sports. In addition to the individual goals of each athlete, those of the entire team may play a crucial role at the moment. However, it should be noted that the coach's view that everyone has an important role on the team, enhances autonomy, competence and relatedness with other players, and thus - improves their well-being (Reinboth and Duda, 2006). The research data also show that in sports, where a competitor has contact with more people (e.g., in team sports), lack of emotional support from parents may be partly substituted by a relationship with "sports family" members (teammates, coaches) (Sacks, Tenenbaum, Pargman, 2006; Delforge, Le Scanff, 2006).

A relatively low negative correlation of Support Network, Understanding the Athlete and Long-term Development Fundamentals was found with age. The older the athletes were, the less their environment was focused on ensuring a sense of security and behaviours promoting long-term sport development. It is supported by the fact that along with age, athletes become more independent and develop a partner-like attitude to training process, and thus, require less care and basic teaching.

The research also demonstrated that sport environment factors (except for Support Network) and family environment factors do not show strong correlations, which means that both environments provide different sources of social support. While coaches are considered "task leaders" – responsible for organization and the training process, parents offer "socio-emotional leadership" that shapes beliefs and value systems, goals and achievements in sport (Cf. Siekańska, 2012; Fredericks, Eccles, 2004). According to research on young athletes (van Rossum, 1995), quite frequently, one parent (about 15% of cases) plays a dual role: as a parent and coach. On the one hand, this can facilitate the organization of sports training, but on the other, it can pose an additional challenge, as a parent should clearly separate the two roles and "flexibly" fit the parent-coach interaction to the needs of a child.

## References

- Baker, J., Schorer J. (2010). *Identification and Development of Talent in Sport – Introduction to the Special Issue*. *Talent Development and Excellence*, 2(2), 119-121.
- Bird, S. R. (2003). *Sex composition, masculinity stereotype dissimilarity and the quality of men's workplace social relations*. *Gender, Work & Organization*, 10(5), 579-604.
- Brazo-Sayavera, J., Olivares, P. R., Andronikos, G., & Martindale, R. J. (2017). *Spanish version of the Talent Development Environment Questionnaire for sport: Cultural adaptation and initial validation*. *PLoS ONE*, 12(6), e0177721.

- Burnetts, C. (2010). *Networking in the sport delivery system in South African Universities*. African Journal of Physical, Health Education, Recreation and Dance, 16, 182-192.
- Cichosz, A. (2016). *Wybrane psychologiczne determinanty wypalenia zawodowego w sporcie u młodzieży w wieku 14-18 lat*. Niepublikowana praca doktorska, Zakład Psychologii, AWF Kraków.
- Delforge, C., Le Scanff, C. (2006). *Parental influence on tennis players: Case studies*. Revista de Psicología del Deporte, 12(2), 233-248.
- Fredericks, J.A., Eccles, J.S. (2004). *Parental influences on youth involvement in sports*. [In:] M.R. Weiss (eds.) *Developmental sport and exercise psychology: A lifespan perspective*. Morgantown, WV: Fitness Information Technology.
- Gagné, F. (2010). *The DMGT 2.0: Overview with focus on the talent development process*. 12<sup>th</sup> ECHA Conference, Paris, 7-10.07.2010.
- Gagné, F. (2013). Oficjalna strona internetowa F. Gagné, udostępniona w styczniu 2013, zawierająca m.in. polskie tłumaczenie aktualnej wersji modelu DMGT 2.0 wraz z opisem. [www.gagnefrancoys.wix.com/dmgt-mddt](http://www.gagnefrancoys.wix.com/dmgt-mddt)
- Gagné, F., Gulbin, J. (2010). *National Athlete Development Survey NADS*. Australian Institute of Sport, Australian Sports Commission – Talent Search.
- Gucciardi, D.F. (2014). *Mental toughness*. [In:] R.C. Eklund & G. Tenenbaum (Eds.), *Encyclopaedia of sport and exercise psychology*. Thousand Oaks, CA: Sage.
- Gucciardi, D.F., & Mallett, C.J. (2010). *Understanding mental toughness and its development in sport*. [In:] S.J. Hanrahan & M.B. Andersen (eds.), *Routledge handbook of applied sport psychology*. London: Routledge.
- Henriksen, K., Stambulova, N., Roessler, K.K. (2011). *Riding the Wave of an Expert: A Successful Talent Development Environment in Kayaking*. The Sport Psychologist, 25, 341-362.
- Hoopar, D., Coughlan, J., & Mullen, M. (2008). *Structural equation modelling: Guidelines for determining model fit*. The Electronic Journal of Business Research Methods, 6(1), 53-60.
- Hoyle, R.H. & Panter, A.T. *Writing about structural equation models*. In R.H. Hoyle (Ed.), *Structural Equation Modelling: Concepts, Issues, and Applications*, (pp. 158-175). London: Sage; 1995.
- Ivarsson, A., Stenling, A., Fallby, J., Johnson, U., Borg, E., & Johansson, G. (2015). *The predictive ability of the talent development environment on youth elite football players' well-being: A person-centered approach*. Psychology of Sport and Exercise, 16, 15-23.
- Krane, V., Williams, J. (2010). *Psychological characteristics of peak performance*. [In:] J. Williams (eds.), *Applied sport psychology: Personal growth to peak performance*, 6th edition. New York, NY: McGraw Hill.
- Li, C., Martindale, R., Wu, Y., & Si, G. (2018). *Psychometric properties of the Talent Development Environment Questionnaire with Chinese talented athletes*. Journal of sports sciences, 36(1), 79-85.
- Limont, W. (2010). *Uczeń zdolny: Jak go rozpoznawać i jak z nim pracować*. Gdańsk: GWP.
- Martindale, R.J.J., Collins, D., A., Abraham, A. (2007). *Effective Talent Development: The Elite Coach Perspective in UK Sport*. Journal of Applied Sport Psychology, 19, 187-206.
- Martindale, R.J.J., Collins, D., Daubney, J. (2005). *Talent Development: A Guide for Practice and Research Within Sport*. Quest, 57, 353-375.
- Martindale, R. J., Collins, D., Douglas, C., & Whike, A. (2013). *Examining the ecological validity of the Talent Development Environment Questionnaire*. Journal of sports sciences, 31(1), 41-47.
- Martindale, R.J.J., Collins, D., Wang, J.C.K., McNeill, M., Lee, K.S., Sproule, J., Westbury, T. (2010). *Development of the Talent Development Environment Questionnaire for Sport*. Journal of Sports Sciences, 28(11), 1209-1221.
- Ntoumanis, N. (2001). *A self-determination approach to the understanding of motivation in physical education*. British Journal of Educational Psychology, 71, 225-242.
- Ntoumanis, N., & Biddle, S. J. (1999). *A review of motivational climate in physical activity*. Journal of sports sciences, 17(8), 643-665.
- Phillips, E., Davids, K., Renshaw, I., Portus, M. (2010). *Expert Performance in Sport and the Dynamics of Talent Development*. Sports Medicine, 40(4), 271-283.
- Reinboth, M., & Duda, J. L. (2006). *Perceived motivational climate, need satisfaction and indices of well-being in team sports: A longitudinal perspective*. Psychology of Sport and Exercise, 7(3), 269-286.
- Reinboth, M., Duda, J. L., & Ntoumanis, N. (2004). *Dimensions of coaching behavior, need satisfaction, and the psychological and physical welfare of young athletes*. Motivation and Emotion, 28, 297-313.
- Rossum, J.H.A. (1995). *Talent in sport: Significant others in the career of top-level Dutch athletes*. [In:] M.W. Katzko, F.J. Mönks (eds.), *Nurturing talent. Individual needs and 7 social ability*, Assen: Van Gorcum.
- Sacks, D.N., Tenenbaum, G., Pargman, D. (2006). *Providing Sport Psychology Services to Families*. [In:] J. Dosil (eds.), *The Sport Psychologist's Handbook: A Guide for Sport-Specific Performance Enhancement*. New York: John Wiley & Sons, Ltd.
- Siekańska, M. (2012). *Athletes' perception of parental support and its influence on sports accomplishments: a retrospective studies*. Human Movement, 13(4), 380-387.
- Siekańska, M. (2013). *Talent sportowy. Psychologiczne i środowiskowe uwarunkowania rozwoju uzdolnionych zawodników*. Kraków: Wydawnictwo AWF.
- Sierszeńska-Leraczyk, M. (2008). *Kwestionariusz Środowiska Rodzinnego jako metoda diagnozowania rozwoju muzycznego*. [In:] W. Limont, J. Cieślukowska i J. Dreszer (eds.), *Zdolności. Talent. Twórczość* (t. 2, 57-71). Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika.
- Wang, J. C. K., Sproule, J., McNeill, M., Martindale, R. J., & Lee, K. S. (2011). *Impact of the talent development environment on achievement goals and life aspirations in Singapore*. Journal of Applied Sport Psychology, 23(3), 263-276.



# The Effectiveness of Exercise Interventions on Coping with Stress: Research Synthesis

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## Summary

Stress-related health issues are associated with mental and physical health decrements, and poor well-being. One intervention that may be useful for stress reduction is exercise. However, the research on exercise-interventions to reduce stress among non-clinical population is scarce. The purpose of the present paper was to systematically review the empirical work on the effectiveness of exercise as a treatment strategy for coping with stress. First, stress definitions and a stress-coping model are presented. Then, findings regarding the influence of exercise-interventions on stress among healthy populations are summarized. In the second half, the psycho-physiological mechanisms which underline the association between exercise and stress are reviewed. Finally, limitations, implications, and overall conclusion are presented. Altogether, the findings suggest that exercise-interventions may be effective in coping with everyday stress among non-clinical population. However, the role of the psycho-physiological mechanisms in the exercise-stress link and their interactions are yet to be established.

**Key words:** exercise, coping strategies, stress

## The Effectiveness of Exercise Interventions on Coping with Stress: Research Synthesis

### Introduction

A high prevalence of stress is evident in the current western societies. A recent survey obtained in the United States indicated that over two-thirds of the 2020 adult respondents from the general population experienced symptoms of stress such as irritability, anger, fatigue, and sleeping irregularities (American Psychological Association, 2013). Similarly, in Europe, the average prevalence of work-related stress in 2005 was 22% among the 27-member states, ranging from 12% in the United Kingdom to 55% in Greece (Milczarek, Schneider, & Rial Gonza'lez, 2009). Given the high prevalence of stress, there is a serious need for effective stress-reducing methods. In other words, there is a growing need for interventions "that can be easily utilized by large numbers of people that are readily available, inexpensive and have minimal side effects" (Henriques et al., 2011, p. 1).

Stress-related health issues are associated with increased healthcare costs, mental-health decrements, and poor well-being (Werneburg et al., 2011). Stress activates physiological responses encompassing changes in the nervous and immune systems, such as an increased level of cortisol, and increased heart rate and blood pres-

sure (Schneiderman et al., 2005). When stress is persistent, these physiological changes can lead to chronic health conditions, such as an elevated blood pressure and a dysregulated immune system (Schneiderman et al., 2005), cognitive complications (McEwen & Sapolsky, 1995), and mental illnesses including depression (Hammen, 2004).

One intervention that may be useful for stress reduction is exercise. Converging evidence has consistently demonstrated the effectiveness of exercise and physical activity in reducing stress and its related symptoms (e.g., Conn 2010a, b; Guskowska, 2004; Koschel, Young, & Navalta, 2017; McGale, McArdle, & Gaffney, 2011; van der Zwan, de Vente, Huizink, Bögels, & de Bruin, 2015). Hence, it was suggested that exercise interventions, which consist of a subset of planned, structured, and repetitive physical activity (Shephard & Balady, 1999), may serve as an adaptive strategy to cope with stress (e.g., Garber, 2017; Firth, Rosenbaum, Stubbs, Gorkzynski, Yung, & Vancampfort, 2016). We review the literature pertaining to the effectiveness of exercise as a treatment strategy for coping with stress. In the first part of this review, stress definition and manifestations, as well as a stress-coping model are presented. Then, findings regarding the influence of exercise interventions on stress and its related symptoms are summarized. In the second half, the psycho-physiological mechanisms related to stress, and several hypotheses concerning the underlining mechanisms of the exercise-stress link are reviewed. Finally, limitations, implications, and an overall conclusion, are presented.

## Stress and Coping

Traditionally, stress has been defined as a stimulus, occurring in one's life such as a loss of a job, or as a response accompanied by physiological arousal and negative affect (Folkman, 2013). The concept of stress is widely discussed in diverse health and behavioral science disciplines, including epidemiology, cognitive, personality, social psychology, and medicine. Early work focused on the physiological response to stressors, also described as the "fight-or-flight" reaction to stress (Cannon, 1932). Cannon's work was later extended by Selye (1956) who assumed that all living organisms display nonspecific changes in response to stressful stimuli. Selye's concept of stress was labeled as a 3-stage General Adaptation Syndrome (GAS), which comprises of an alarm reaction, resistance, and exhaustion (Selye, 1956). Each stage consists of both physiological and behavioral responses. Lacking restorative measures, results in physical and/or psychological deterioration.

Beginning in the 1960s and 1970s, stress was conceptualized as a transactional phenomenon dependent on the perceiver's meaning given to the stimulus (Lazarus, 1966; 1979). The underlying idea is that different people may perceive a given event or situation differently and uniquely. These perceptions, rather than the objective stressors, determine the stress response, and in turn, the chosen coping strategy. This notion is regarded as the foundation of the stress and coping model (Lazarus & Folkman, 1992).

According to the stress and coping model, also known as the cognitive-evaluative model (Lazarus & Folkman, 1992), stress can be viewed as a response to a stressful event mediated by personal resources for coping, and cognitive appraisal of the event. Cognitive appraisal consists of three main phases; the *primary appraisal*, which serves to evaluate the potentially stressing event. The *secondary appraisal*, is a judgement concerning what might be done with respect to the availability of coping resources. Finally, a *reappraisal*, is a successive valuation that is based on new information obtained from the environment and/or the person during the occurring circumstances. The reappraisal and the individual's psychological adjustments are determined by the effectiveness of the coping strategies chosen following the operation of the secondary appraisal.

Coping refers to the mental and behavioral efforts made to manage stress (Carver, Scheier, & Weintraub, 1989). Accordingly, successful coping result from a sufficient match between appraisal and coping strategy. In early formulations of the model, coping strategies were conceptualized along two dimensions: (1) *problem-focused coping*, and (2) *emotion-focused coping*. Problem-focused coping strategies target the origins of stress in practical terms which tackle the stressful situation that is causing stress. Examples of such coping strategies include active coping, problem solving, and information seeking. By contrast, emotion-focused coping strategies are aimed at

altering the way one perceives the stressful situation or feels about it. Examples of these efforts include seeking social support and venting feelings, as well as avoidance, and denial. Lazarus and Folkman's (1992) model suggest that problem-focused coping strategies are most efficient when facing stressors that are changeable, while emotion-focused strategies are most adaptive when the stressor is unchangeable or when this strategy is used in conjunction with problem-focused coping efforts.

Taken together, the common conceptualization of stress postulates that equally important to the environmental demands is the way an individual reacts to the stressful experience and the strategy employed by the individual (Garber, 2017). Individuals can respond to stressful experiences in both adaptive and maladaptive behaviors, with maladaptive coping strategies being associated with less favorable outcomes (Skinner, Edge, Altman, & Sherwood, 2003). Examples of maladaptive coping include self-blame, venting, behavioral disengagement, substance use, and denial. In contrast, adaptive coping strategies include the use of humor, acceptance, planning, positive reframing, emotional support, and active coping (Garber, 2017; Jalbrzikowski, Sugar, Zinberg, Bachman, Cannon, & Bearden, 2014). One manifestation of active coping that was also referred to as an adaptive coping strategy is exercise.

## Exercise and Stress

Exercise is considered an adaptive coping strategy. Exercise is a subset of planned, structured, and repetitive physical actions, aimed at improving or maintaining physical fitness (American College of Sports Medicine [ACSM], 2013). Exercise types include strength, endurance, functional, balance and flexibility. Of these, the most comprehensively studied in the stress and exercise literature have been endurance exercises, also known as aerobic exercise (Gillis & MacDonald, 2005). Examples of aerobic exercise include running, walking, dancing, and swimming. Traditional exercise recommendations suggest a threshold of activity that is necessary for health protection, while the ACSM's (2015) position stand on the issue indicates that low to moderate-intensity exercise reduces blood pressure as much, or more, than higher intensity exercise (see Riebe et al., 2015 for a review).

According to the current ACSM (2015) recommendations for exercise participation, adults must undertake at least 150 minutes of moderate-intensity exercise per week to maintain their fitness and health. Moderate exercise increases one's heart rate and breathing; specifically, it prompts 40%–60% of heart rate reserve. Examples include jogging and bicycle riding slower than 10mph (Weinstock, Farney, Elrod, Henderson, & Weiss, 2017). Low to moderate exercise intensity is associated with favorable status on coronary artery disease and other stress-related risk factors. In the domain of exercise and stress reduction, exercise interventions usually include at least three exercise sessions per week of at

least 15 minutes duration at moderate intensities (Riebe et al., 2015). In this vein, throughout this review, the term exercise intervention refers to an aerobic exercise program, performed for fitness purposes, and includes at least three exercise sessions per week at a moderate intensity.

The effectiveness of exercise was evident in the scientific literature as one which positively affects physical health and stress-reduction along with its related manifestations, such as anxiety and depression symptoms (e.g., Buckley et al., 2004; Conn 2010a,b; de Assis et al., 2008; Wipfli, Rethorst, Landers, 2008). Systematic reviews were targeted at examining the clinical evidence of the beneficial effects of exercise on various medical conditions, such as cancer (Knobf & Winters-Stone, 2013), hypertension (Pescatello, MacDonald, Lambertini, & Johnson, 2015), diabetes (Koivula, Tornberg, & Franks, 2013), and chronic heart disease (Anderson et al., 2016). Specifically, people who exercise were less prevalent to mental abnormalities such as depression, negative affectivity, and anxiety (e.g., Conn 2010a,b; Wipfli, Rethorst, Landers, 2008).

Exercise is associated with reduced reported stress, a finding that has been evident in varied populations including athletes, students, elderly, and veterans with post-traumatic stress disorder (Buckley et al., 2004; de Assis et al., 2008; King, Taylor, & Haskell, 1993; McHugh & Lawlor, 2012; Taylor-Piliae et al., 2010). While it is equivocal whether those who exercise experience less stressful life events (Mooy, de Vries, & Grootenhuis, 2000; Stults-Kolehmainen & Sinha, 2014), an association between exercise and fewer daily hassles was noted (Nguyen-Michel et al., 2006). Several meta-analyses revealed that exercise is an effective treatment for depression (Schuch et al., 2016), and that regular physical activity reduces anxiety symptoms in non-clinical adult populations (Rebar, Stanton, Geard, Short, Duncan, & Vandelandotte, 2015). In addition, it was recently suggested that exercise can serve as a treatment for coping with extremely stressful life events (Rosenbaum, Vancampfort, Steel, Newby, Ward, & Stubbs, 2015), and as a mean to increase the overall quality of life and psychological well-being (Gerber & Puhse, 2009; Salmon, 2001).

Indeed, exercise has been demonstrated to promote positive changes in one's mental health and the ability to cope with stressful encounters (Dunn, Trivedi, O'Neal, 2001; Edenfield & Blumenthal, 2011; Long, 1983; Salmon, 2001). A recent review concluded that exercise buffers the effects of stress on physical health (Gerber & Puhse, 2009). For instance, exercise prevents stress-induced immunosuppression (Fleshner, 2005). Considering the seemingly noticeable effects of exercise on stress, it has been conceptualized as a method to inoculate individuals against the throes of stressful experience (Garber, 2017; Salmon, 2001). Based on this notion, several studies were designed and performed to examine the effect of exercise interventions on stress reduction and consequently its associated symptoms.

Findings related to the relationship between exercise and stress-related symptoms were summarized in a considerable amount of meta analyses and systematic reviews (e.g., Hamer, Taylor, & Steptoe, 2006; McNeely, Campbell, Rowe, Klassen, Mackey, & Courneya, 2006; Peluso, & Andrade, 2005; Meier, 1994; Scully, Kremer, Meade, Graham, & Dudgeon, 1998). However, only a few of them focused on randomized controlled trials, and very few have dealt with non-clinical populations (Hamer, Taylor, & Steptoe, 2006). That is, the most systematic reviews concerning the influence of exercise interventions are selective in their choice of health groups considered, with main focus on depressive or anxious diagnosed population (e.g., Conn, 2010a,b; Dunn & Dishman, 1991; Dunn, Trivedi, & O'Neal, 2001; Lawlor & Hopker, 2001). In addition, we failed to locate a systematic review which have focused on exercise interventions as a treatment for daily stress in healthy people. The purpose of the current paper is to comprehensively review the body of literature which has examined the effectiveness of exercise as a treatment strategy for coping with stress in non-clinical populations.

## Method

### Search Strategy

Four electronic databases {Google Scholar, Web of Science 'all databases,' PsycINFO, and PsycARTICLES (combined search via EBSCOhost)} were used for the search of relevant literature. The present review searches for literature published from 2000 up to November 2017. The search terms 'exercise intervention', 'physical activity intervention', and 'training program', were combined with stress, anxiety, depressive symptoms, well-being, and coping strategies. For the databases, Google Scholar, Web of Science, and PsycINFO/PsycARTICLES, search terms were used successively (e.g., first search term: exercise intervention AND stress; second search term: physical activity intervention AND stress; third search term: exercise intervention AND coping strategies; etc.). The primary literature search resulted in a total of 1,320,000 articles (including duplicates between databases).

### Study Selection

The search and screening process for relevant literature included an initial check of the titles of all retrieved studies, removing the duplicates, and excluding those studies, which were obviously related to other fields of research. Article titles not clearly signaling the field of research were excluded in this step. The initial screening resulted in 55 remaining articles, which were further screened for eligibility based on the following criteria: (a) the study must be published in full in English language in a peer-reviewed journal, (b) the study must be based on original data, (c) the study must be related to

exercise intervention aimed to reduce stress and its related symptoms (i.e., objective and subjective stress measures, affect and mood states, anxiety and depression symptoms, perceptions of quality of life, and psychological well-being), (d) the term exercise intervention refers to randomized controlled trials, which included over 3-days exercise program, operated in moderate intensity, (e) the intervention was carried out among a sample of adults (i.e., over the age of 18) with no clinical diagnosis, and (f) included aerobic exercise training (i.e., running, biking, jogging, dancing etc.).

Article abstracts, and full texts were used to perform a thorough check of these criteria. Following the selection procedure, 10 articles were identified. The reference sections of each of these 10 articles were then screened by hand to double check for studies, which have been potentially missed out on during the preceding steps of the selection process. As a result, two more articles were found and added to the list.

## Findings: Exercise Interventions as a Strategy for Coping with Stress

Interventions which conducted randomized controlled trial have demonstrated that exercise programs resulted in reduction of perceived stress in real-world settings. For example, Eriksen and his colleagues (2002) found that an exercise intervention (comprised of aerobic dancing program) in the workplace positively influenced employees' health. The intervention subjects (83 males, 27 females, age range: 36–45 years) exercised 13 weeks at leisure time in off-worksites training facilities. Results indicated that exercise training improved overall perception of quality of life and psychological and physical health sub-domains. The psychological benefits held steady only for those who continued to exercise on their own. Similarly, Throne et al. (2000) found that a 16-week intervention (exercise four times per week, 40 min) improved stress reactivity in a group of firefighters.

Similarly, six-weeks of aerobic exercise intervention reduced cardiovascular activity levels during psychological stress and recovery in healthy young adults. In this study, forty-five sedentary young adults (18–30 years old) were engaged in either 6 weeks of aerobic training, weight training, or a control (no-treatment) condition. Following the intervention, participants were exposed to experimentally-induced psychological stress while their physiological reactivity was measured during rest, psychological stress, and recovery periods. Results indicated a better physiological response to stress among aerobically trained participants relative to anaerobic and control conditions marked by lower levels of heart rate and systolic blood pressure during psychological stress and recovery periods. The authors claimed that aerobic exercise holds a protective role against age-related increases in coronary heart disease for individuals who adopt aerobic exercise early in life and maintain exercising across the life span (Spalding, Lyon, Steel, & Hatfield, 2004).

Support for these findings was evident in other exercise-intervention studies using adults (e.g., Atlantis et al., 2004; Courneya, Mackey, Bell, Jones, Field, & Fairley, 2003; Hopkins et al., 2012).

Randomized controlled trials studies showed that exercise is an effective method for improving stress symptoms and quality of life also among students. For instance, a 20-week aerobic exercise training reduced psychological stress and physiological stress responses during the academic examination period (end of the semester) in sedentary students (von Haaren et al., 2016). In addition, exercise intervention significantly reduced study-related fatigue (emotional exhaustion, overall fatigue, and need for recovery), which is known as an outcome of prolonged study stress (de Vries, van Hooff, Geurts, & Kompier, 2016). Taken together, these findings suggest that regular exercise may be an accessible and inexpensive method for preventing or reducing study-related stress in university students, a population who is often facing stress.

Another population that may be exposed to continuous stress in everyday life is the elderly. More than half of the elderly aged over 60 years old in the US suffers from hypertension (Li et al., 2012), and other mental health problems, resulting from changes in age, living conditions, and physical conditions, such as loneliness, depression, anxiety, and fear (Banach & Aronow, 2011, Gao, Wang, & Yu, 2014). An appropriate exercise was suggested to serve as a safe guard form tension without causing side effects (Wenxin, Menglong, & Jiwei, 2016).

In a recent study, 12-weeks exercise intervention was conducted to evaluate the effectiveness of exercise on mental health outcomes and coping style (negative vs. positive) among elderly who suffer from high levels of stress. Following the intervention, participants reported significantly lower levels of mental health symptoms, such as somatization, interpersonal sensitivity, depression, anxiety, hostility, and paranoia, than the control subjects. Furthermore, the intervention participants reported significantly greater use of positive coping style than the control participants. According to the authors, exercise can effectively improve mental health levels and coping ability of elderly (Wenxin et al., 2016). This conclusion is consistent with other intervention studies reporting similar results among the elderly (e.g., Tarazona-Santabalbina et al., 2016).

Importantly, the positive effects of exercise on stress-related symptoms and quality of life may be attributed to various peripheral factors, as it is known that stress reduction often occurs when people indulge in activities they find pleasurable and satisfying (Sandlund & Norlander, 2000). To control for this potential effect, van der Zwan et al. (2015) compared the efficacy of a 5-weeks exercise intervention to a similar length interventions of mindfulness meditation intervention, and heart rate variability biofeedback. In this randomized controlled trial, non-significant advantage was found to exercise over the other interventions in reducing stress-related symptoms. All three interventions equally

contributed to participants' well-being, reduced stress, anxiety and depressive symptoms, and improved psychological well-being and sleep quality (van der Zwan et al., 2015). In another study, the efficacy of aerobic exercise intervention was compared to the efficacy of yoga intervention, consisting of breathing technique and stretching through different body pose. Both active interventions produced similar improvement in stress-related symptoms including fatigue and vitality compared to the control participants (Oken et al., 2004). Similar findings were reported by Ross and Thomas, (2010).

These findings suggest that regular exercise enhances physical health and reduces stress, but these benefits may be mediated by various mechanisms, which are also common to other active interventions. These mechanisms are psychological and physiological (Peluso & Andrade, 2005).

## Mechanisms Involved in the Exercise-Stress Link

Diverse psychological and physiological explanations were offered for the stress reduction effects of exercise training. Of the psychological theories, the most attention has been given to the *distraction hypothesis* which maintains that diversion from unfavorable stimuli improved mood during and after exercise (Morgan, 1985). Namely, the positive influence of exercise on stress is a result of distraction from negative thoughts (Morgan, 1985, 1987), and improved retrieval of positive thoughts (Clark, Milberg, & Ross, 1983). To test the distraction hypothesis, Saklofske et al. (1992) compared the effects of walking and relaxation. Both treatments led to reduced perceptions of stress levels. However, the walking subjects also showed an improvement in subjective energy. Thus, although exercise and relaxation have a similar effect on mood, exercise is superior for the energizing feeling.

According to the mastery hypothesis, the completion of an effortful task, such as exercise, may elicit a sense of mastery or achievement, thereby improving mood and reducing stress (Simons, Epstein, McGowan, Kupfer, & Robertson, 1985). This assumption is in line with Bandura's theory of self-efficacy. Specifically, since physical exercise can be perceived as a challenging and effortful task, being involved in such activity might enhance mood and stress reduction (North, McCullagh, & Tran, 1990).

Another explanation for the exercise-stress reduction linkage is driven from the self-expansion theory, claiming that individuals are fundamentally motivated to grow and improve the self by acquiring new identities, enhancing capabilities, developing new perspectives, and gaining resources (Aron, Aron, & Norman, 2001; Aron, Norman, & Aron, 1998). This broadening of the self with novel content can be achieved by participating in a new activity that is exciting, challenging, and interesting, such as exercise (Mattingly & Le-

wandowski, 2013). Accordingly, the positive influence of exercise on mental health can result from one's participation in a new exciting activity which expands the self.

An alternative explanation to the beneficial effects of physical activity on mental health attributes it to the engagement in social interactions during exercise (Peluso & Andrade, 2005). According to the social interaction hypothesis (Ransford, 1982), the social relationships commonly inherent in physical activity, as well as the mutual support that occurs among individuals involved in exercise, play an important role in the effects of exercise on stress reduction and mental health in general.

Of the biological theories, the most attention has been given to (1) the alterations in monoamines, and (2) the activation of endorphins (Peluso & Andrade, 2005). The first approach relies on the findings that physical activity increases the synaptic transmission of monoamines, including serotonin, dopamine, and adrenaline (Kashihara, Maruyama, Murota, & Nakahara, 2009; Peluso & Andrade, 2005), which supposedly function as anti-depressive medications (Dunn & Dishman, 1991). However, it may be an oversimplification to claim that the effectiveness of anti-depressive substrates is attributed to increased synaptic transmission of monoamines. Therefore, although this explanation may be reasonable, it likewise seems too simplistic to explain the reduction of stress associated with physical activity (Morgan, 1985; Dunn & Dishman, 1991).

The second most common explanation refers to the action of endorphins within the central nervous system (Morgan, 1985; Nicoloff & Schwenk, 1995). Several studies consistently demonstrated that plasma level of endorphins is elevated following exercise (e.g., Dishman, & O'Connor, 2009; Grossman et al., 1984). Theoretically, the inhibitory effects of endorphins on the central nervous system (CNS) are accountable for the sensation of calm and improved mood experienced following exercise (Kashihara et al., 2009). In particular, beta-endorphin in the CNS act as a physiological modulator of the positive effects of exercise on mood (Anish, 2005). This hypothesis is supported by increased irritability, restlessness, nervousness, and feelings of frustration reported by physically active individuals when withdrawn from exercise, and in a state of endorphin abstinence (Peluso & Andrade, 2005).

Nevertheless, to date, there is no consensus regarding the relative importance of neither of both psychological and physiological claims for the association between exercise and stress reduction. Peluso and Andrade (2005) claims that a psychobiological framework is more comprehensive than each of them separately. Knowledge integration leads to a conceptual framework that sheds more light on the role of exercise as a treatment strategy for coping with stress. Alongside with the need to clarify the underlying mechanisms of the association between exercise and stress, and although most of the research findings show that exercise holds beneficial effect on stress levels, there are some issues which must be considered.



## The Exercise and Stress link: Issues to consider

Although most studies' findings provide evidence to the positive influence of exercise on stress levels, we note that in some cases the positive influence of exercise may not be applicable. For example, high intensity exercise, which exceeds individuals' habitual level, is less likely to improve mood and, may even worsen it (Steptoe, & Bolton, 1988). Similarly, exercise which involves competition can worsen mood in habitual exercisers (Steptoe, Kearsley, & Walters, 1993). Additionally, habitually active exercisers tend to exercise more in the face of stress than those in beginning stages of exercise. Consequently, stress may have differential influence on exercise adoption, maintenance, and relapse (Salmon, 2001).

Furthermore, although it appears that the physical activity itself and not fitness level, mollifies the effects of stress, there is no consensus on this claim (Stults-Kolehmainen & Sinha, 2014). People who are aerobically fit have less cardiac reactivity to stressors (Crews & Landers, 1987; Jackson & Dishman, 2006), and a better cardiovascular recovery (Chafin, Christenfeld, & Gerin, 2008; Jamieson, Flood, & Lavoie, 1994).

Another factor that must be considered in regard to the benefits and/or harms of exercise to combat stress, is the *gender factor*. Several gender differences in relation to both coping strategies and cardiovascular response to exercise are relevant to the scope of the current review. Although the literature examining the relation between gender and stress reveals several conflicting outcomes, numerous authors have determined that women tend to confront stressful situations more often than men. Furthermore, women have been found to suffer more chronic stress than men (e.g., McDonough & Walters, 2001) and are exposed to more daily stressful events (Kessler & McLeod, 1984). Furthermore, in a study comparing gender differences in the use of coping strategies, women reported significantly higher use of emotional and avoidance coping styles and lower rational and detachment coping than men (Matud, 2004). These findings indicate that adaptive coping style intervention, and specifically exercise interventions may hold a significant benefit for women who are known to deal with daily stress associated with their routine role functioning. This notion, and the need to consider gender differences in the design of stress-reduction exercise interventions are also emphasized by studies indicating the moderating role of gender in the relationship between exercise and mood changes as well as in the link between exercise and cardiovascular response.

For example, in a study that examined the impact of the duration and intensity of physical activity on stress-related clinical issues (i.e., common anxiety and depressive states) long-duration physical activity was found to confer protection against common mood and anxiety states amongst men. However, no such protection was evident amongst women. The protective effect

of exercise did not appear to vary according to the intensity of activity in men or women (Bhui & Fletcher, 2000). These findings combined with evidence of higher prevalence of stress amongst women in all societies emphasize the importance of considering gender differences in the design of exercise interventions intended to reduce stress and/ or improve mood. Such consideration may help in targeting some of the unique needs of women versus men in relation to coping with stress, and ultimately, facilitate the protective effect on psychological well-being afforded by exercise in this population.

Lastly, although the positive relationship between exercise and reduced levels of stress is mostly consistent, some studies failed to reveal any relationship between stress and exercise (Hubbs et al., 2012; Jex, Spector, Gudanowski, & Newman, 1995; Yin et al., 2005; Zuzanek, Robinson, & Iwasaki, 1998). Hence, the benefits of exercise for mental health and stress must be viewed with cautious.

## Discussion

We examined the effectiveness of exercise on coping with stress among adults thorough a review of exercise interventions in randomized controlled trials. The main findings presented here support the notion that exercise promotes positive changes in one's mental health and ability to cope with stressful encounters (Atlantis et al., 2004; Courneya et al., 2003; de Vries et al., 2016; Erikson et al., 2002; Hopkins et al., 2012; Throne et al., 2000; von Haaren et al., 2016). Moreover, exercise interventions appear to improve one's depression and anxiety symptoms, which are recognized as extreme manifestations of stress (Hammen, 2004; Nicoloff & Schwenk, 1995; Rebar et al., 2015).

The benefits of exercise for stress reduction may be mediated by both psychological and physiological mechanisms (Kashira et al., 2009; Peluso & Andrade, 2005). However, the precise contribution of each mechanism to the relationship between exercise and stress, and the manner each mechanism interacts with other mechanisms, are yet to be clarified in future studies. Moreover, although the relationship between exercise and stress reduction was consistent in most studies, in some cases it was not supported (Hubbs et al., 2012; Jex, Spector, Gudanowski, & Newman, 1995; Yin et al., 2005; Zuzanek, Robinson, & Iwasaki, 1998). Hence, more scientific effort must shed light on the effectiveness of regular exercise for coping with stress.

## Limitations and Future Directions

As might be expected, the current review holds several limitations. Some, are derived from methodological issues of the exercise intervention studies presented here, and other limitations are concerned with methodological issues of the current review. Regarding the first type

of limitations, designs of control groups in exercise intervention studies are often different from one another and limits the ability to compare the interventions' outcomes. Similarly, although the exercise interventions presented in this review share similar objective (i.e., to explore the efficacy of exercise in reducing stress), in some cases, different measures of stress were operated. Thus, more consistency in the utilization of control groups and in the assessment of stress are required to clarify whether the changes in stress levels are due to the exercise intervention or due to other factors, such as participating in social activity.

Some limitations derive from the methodology of the current review. Although the current review followed specific inclusion criteria (e.g., exercise intensity and type, population characteristics, and study design), some variability still existed (e.g., length of interventions). That is, due to differences in the exercise regimen, stress assessment, length of intervention, and population characteristics such as gender and age. These limitations must be considered when one makes conclusions regarding the benefits of exercise on stress reduction.

Moreover, the current review included only interventions that were conducted as part of randomized controlled trials. Hence, some exercise-and-stress related findings that could shed more light on the effectiveness of exercise as a coping mechanism were not considered (e.g., Blumenthal et al., 2005; Kritz-Silverstein, Barrett-Connor, & Corbeau, 2001; Lawlor & Hopker, 2001). Future systematic review and meta-analysis with a clearer inclusion and exclusion criteria, as well as a wider consideration of the findings relating exercise to stress reduction, may better account for the effect of exercise as a coping mechanism.

Although the data presented here suggest that improvements in cardio-vascular fitness due to participation in moderate exercise may play a significant role in reducing mental stress, the clinical significance of these findings must be prudently evaluated. We proposed that the association between exercise and stress reduction may be mediated by psychological and social factors (e.g., Morgan, 1985, 1987; Peluso & Andrade, 2005), thus, it is recommended to test the interaction between a given dose of exercise with various social and psychological factors. Also, most of the findings in relation to the underlining physiological mechanisms of the exercise and stress association were obtained in animal studies (e.g., Cotman & Berchtold, 2002; Cotman, Berchtold, & Christie, 2007; Voss, Vivar, Kramer, & van Praag, 2013). Hence, further studies must document the clinical benefits of regular aerobic training in humans, and to elucidate the mechanisms by which exercise alters psycho-physiologic stress response.

The present review raises the need for further investigation of the effects of exercise on stress and its' related symptoms. For example, more research effort must examine questions concerning the appropriate dose of exercise required for stress-reduction. Particularly, we must determine the minimum threshold intensity, vol-

ume of exercise, increase in energy expenditure that benefit stress reduction. Similarly, we must determine the type of exercise and exercise environments useful for stress reduction. Specifically, may exercising in the nature hold unique benefits for stress reduction in comparison to exercising in an in-door environment?

In addition, the current review emphasizes the need for better understanding of the effectiveness of exercise in comparison to alternative treatments (e.g., pharmacotherapy, CBT, mindfulness, etc.) in affecting stress reactivity and coping efficiency among different populations. Such analysis may stimulate research on targeting exercise interventions to people who will benefit most from a given type of exercise, with an identification of those who will react better to alternative treatments when coping with stress.

## Implications and Conclusion

The current review holds several important implications. Stress is widely prevalent and has repercussions for a wide range of mental and physical health issues (American Psychological Association, 2013; Milczarek et al., 2009). Hence, the potential to minimize its negative implications by a simple mean such as exercise is of significance for professionals in the health and exercise domains. The findings presented here, combined with consistent findings linking stress to depression, cardiovascular disease, and many other health endpoints (Anderson et al., 2016; Hopkins et al., 2012; Stults-Kolehmainen & Sinha, 2014), may encourage health policies to include provisions for integrated prevention and treatment of stress and its related symptoms by the promotion of physical activity.

Nevertheless, for this progress to occur, the well-identified associations between stress and exercise must be further recognized within the community of health and exercise researchers, practitioners, and other advocates. Furthermore, it seems that action must be taken to advance exercise interventions and have them considered as effective stress management techniques (Stults-Kolehmainen & Sinha, 2014). First, practitioners must use both objective and subjective assessments of stress for everyone to more reliably identify people who may be at risk for the negative impacts of stress. Moreover, a consideration of stress vulnerability across stages of change, as well as the impacts of exercise in different stages, may be useful for practitioners in choosing the appropriate exercise intervention for their client.

Importantly, new exercisers, especially those who are more dispose to stress, may find it hard to initiate and maintain physical activity as part of their daily life (Stults-Kolehmainen & Sinha, 2014). In such cases, it is even imperative to design a training program to fit the fitness level of the individual. This approach emphasizes that exercise interventions may be more effective when tailored to the individual (Garber et al., 2011). Hence, the interventionist must, as much as possible, allow the

people to choose which exercises they would like to be engaged with. By allowing this autonomy, practitioners may increase individuals' enjoyment as well as their motivation to adhere exercising (Edmunds, Ntoumanis, & Duda, 2007; Firth et al., 2016).

In conclusion, exercise appears to be a practicable treatment for coping with stress and improving mental health among adults. Providing people with professional support to identify their exercise preferences and goals, as well as identifying their available stress coping strategies, may enable them to overcome psychological barriers, and maintain motivation towards regular physical activity. Moreover, it may encourage people to use simple and inexpensive strategy such as exercise, when facing stress in their daily life.

## References

- American College of Sports Medicine (2013). *ACSM's guidelines for exercise testing and prescription*. Lippincott Williams & Wilkins.
- American Psychological Association. (2013). Stress in America—Missing the health care connection American Psychological Association. Retrieved from <http://www.apa.org/news/press/releases/stress/>.
- Anderson, L., Oldridge, N., Thompson, D. R., Zwisler, A. D., Rees, K., Martin, N., & Taylor, R. S. (2016). Exercise-based cardiac rehabilitation for coronary heart disease: Cochrane systematic review and meta-analysis. *Journal of the American College of Cardiology*, 67(1), 1-12.
- Anish, E. J. (2005). Exercise and its effects on the central nervous system. *Current sports medicine reports*, 4(1), 18-23.
- Aron, A., Aron, E. N., & Norman, C. (2001). *The self expansion model of motivation and cognition in close relationships and beyond*. In M. Clark & G. Fletcher (Eds.), *Blackwell handbook of social psychology. Interpersonal processes* (2, pp. 478-501). Oxford: Blackwell.
- Aron, A., Norman, C. C., & Aron, E.N. (1998). The self-expansion model and motivation. *Representative Research in Social Psychology*, 22, 1-13.
- Assis, M. A. D., Mello, M. F. D., Scorza, F. A., Cadrobbi, M. P., Schooedl, A. F., Silva, S. G. D., & Arida, R. M. (2008). Evaluation of physical activity habits in patients with post-traumatic stress disorder. *Clinics*, 63(4), 473-478.
- Atlantis, E., Chow, C. M., Kirby, A., & Singh, M. F. (2004). An effective exercise-based intervention for improving mental health and quality of life measures: a randomized controlled trial. *Preventive medicine*, 39(2), 424-434.
- Banach, M., & Aronow, W. S. (2011). Should we have any doubts about hypertension therapy in elderly patients. *Polskie Archiwum Medycyny Wewnętrznej*, 121(7-8), 253-258.
- Both, F., Hoogendoorn, M., Klein, M. C., & Treur, J. (2010). *Computational modeling and analysis of the role of physical activity in mood regulation and depression*. In International Conference on Neural Information Processing (pp. 270-281). Springer, Berlin, Heidelberg.
- Blumenthal, J. A., Sherwood, A., Babyak, M. A., Watkins, L. L., Waugh, R., Georgiades, A., & Hinderliter, A. (2005). Effects of exercise and stress management training on markers of cardiovascular risk in patients with ischemic heart disease: a randomized controlled trial. *Jama*, 293(13), 1626-1634.
- Berger, B. G., & Owen, D. R. (1992). Mood alteration with yoga and swimming: aerobic exercise may not be necessary. *Perceptual and Motor skills*, 75(3), 1331-1343.
- Bhui, K., & Fletcher, A. (2000). Common mood and anxiety states: gender differences in the protective effect of physical activity. *Social Psychiatry and Psychiatric Epidemiology*, 35(1), 28-35.
- Buckley, T. C., Mozley, S. L., Bedard, M. A., Dewulf, A. C., & Greif, J. (2004). Preventive health behaviors, health-risk behaviors, physical morbidity, and health-related role functioning impairment in veterans with post-traumatic stress disorder. *Military medicine*, 169(7), 536.
- Cannon, W. B. (1932). *Wisdom of the Body*. New York: W. W. Norton
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56, 267-283.
- Conn, V. S. (2010a). Anxiety outcomes after physical activity interventions: meta-analysis findings. *Nursing research*, 59(3), 224.
- Conn, V. S. (2010b). Depressive symptom outcomes of physical activity interventions: meta-analysis findings. *Annals of Behavioral Medicine*, 39(2), 128-138.
- Chafin, S., Christenfeld, N., & Gerin, W. (2008). Improving cardiovascular recovery from stress with brief poststress exercise. *Health psychology*, 27(1S), S64.
- Cotman, C. W., & Berchtold, N. C. (2002). Exercise: a behavioral intervention to enhance brain health and plasticity. *Trends in neurosciences*, 25(6), 295-301.
- Cotman, C. W., Berchtold, N. C., & Christie, L. A. (2007). Exercise builds brain health: key roles of growth factor cascades and inflammation. *Trends in neurosciences*, 30(9), 464-472.
- Courneya, K. S., Mackey, J. R., Bell, G. J., Jones, L. W., Field, C. J., & Fairey, A. S. (2003). Randomized controlled trial of exercise training in postmenopausal breast cancer survivors: cardiopulmonary and quality of life outcomes. *Journal of clinical oncology*, 21(9), 1660-1668.
- Crews, D. J., & Landers, D. M. (1987). A meta-analytic review of aerobic fitness and reactivity to psychosocial stressors. *Medicine and science in sports and exercise*, 19(5 Suppl), S114-20.
- Dishman, R. K., & O'Connor, P. J. (2009). Lessons in exercise neurobiology: the case of endorphins. *Mental Health and Physical Activity*, 2(1), 4-9.
- de Vries, J. D., van Hooff, M. L., Geurts, S. A., & Kompier, M. A. (2016). Exercise as an intervention to reduce study-related fatigue among university students: A two-arm parallel randomized controlled trial. *PLoS one*, 11(3), e0152137.
- Dunn, A. L., & Dishman, R. K. (1991). Exercise and the Neurobiology of Depression. *Exercise and sport sciences reviews*, 19(1), 41-98.
- Dunn, A. L., Trivedi, M. H., & O'Neal, H. A. (2001). Physical activity dose-response effects on outcomes of depression and anxiety. *Medicine & Science in Sports & Exercise*, 33(6):S587-97.

- Dustman, R. E., Ruhling, R. O., Russell, E. M., Shearer, D. E., Bonekat, H. W., Shigeoka, J. W., & Bradford, D. C. (1984). Aerobic exercise training and improved neuropsychological function of older individuals. *Neurobiology of aging*, 5(1), 35-42.
- Edenfield, T.M. & Blumenthal, J.A. (2011). *Exercise and stress*. In: Baum, A.; Contrada, R., editors. Handbook of stress science. Springer; New York. p.301-20.
- Edmunds, J., Ntoumanis, N., & Duda, J. L. (2007). Adherence and well-being in overweight and obese patients referred to an exercise on prescription scheme: A self-determination theory perspective. *Psychology of Sport and Exercise*, 8(5), 722-740.
- Eriksen, H. R., Ihlebaek, C., Mikkelsen, A., Grønningsæter, H., Sandal, G. M., & Ursin, H. (2002). Improving subjective health at the worksite: a randomized controlled trial of stress management training, physical exercise and an integrated health programme. *Occupational Medicine*, 52(7), 383-391.
- Firth, J., Rosenbaum, S., Stubbs, B., Gorynski, P., Yung, A. R., & Vancampfort, D. (2016). Motivating factors and barriers towards exercise in severe mental illness: a systematic review and meta-analysis. *Psychological medicine*, 46(14), 2869-2881.
- Fleshner, F. (2005). Physical activity and stress resistance: sympathetic nervous system adaptations prevent stress-induced immunosuppression. *Exercise and sport sciences reviews*, 33(3), 120-126.
- Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gniel, R. (1986). The dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology*, 50, 992-1003.
- Folkman, S. (2013). *Stress: appraisal and coping*. In *Encyclopedia of behavioral medicine* (pp. 1913-1915). Springer New York.
- Garber, M. C. (2017). Exercise as a Stress Coping Mechanism in a Pharmacy Student Population. *American journal of pharmaceutical education*, 81(3), 50.
- Gerber, M., & Pühse, U. (2009). Do exercise and fitness protect against stress-induced health complaints? A review of the literature. *Scandinavian journal of public health*, 37(8), 801-819.
- Garber, C. E., Blissmer, B., Deschenes, M. R., Franklin, B. A., Lamonte, M. J., Lee, I. M., & Swain, D. P. (2011). Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: guidance for prescribing exercise. *Medicine & Science in Sports & Exercise*, 43(7), 1334-1359.
- Gao, C., Wang, S. J., & Yu, P. L. (2014). Population aging status and development tendency. *Chinese Journal of Geriatrics*, 33(8), 924-926.
- Gillis, A., & MacDonald, B. (2005). Deconditioning in the hospitalized elderly. *The Canadian Nurse*, 101(6), 16.
- Ginis, K. A. M., Latimer, A. E., McKechnie, K., Ditor, D. S., McCartney, N., Hicks, A. L., & Craven, B. C. (2003). Using exercise to enhance subjective well-being among people with spinal cord injury: The mediating influences of stress and pain. *Rehabilitation Psychology*, 48(3), 157.
- Grossman, A., Bouloux, P., Price, P., Drury, P. L., Lam, K. S. L., Turner, T., & Sutton, J. (1984). The role of opioid peptides in the hormonal responses to acute exercise in man. *Clinical Science*, 67(5), 483-491.
- Guszkowska, M. (2004). Effects of exercise on anxiety, depression and mood. *Psychiatria polska*, 38(4), 611-620.
- Hubbs, A., Doyle, E. I., Bowden, R. G., & Doyle, R. D. (2012). Relationships among self-esteem, stress, and physical activity in college students. *Psychological reports*, 110(2), 469-474.
- Jackson, E. M., & Dishman, R. K. (2006). Cardiorespiratory fitness and laboratory stress: A meta regression analysis. *Psychophysiology*, 43(1), 57-72.
- Jamieson, J., Flood, K., & Lavoie, N. (1994). Physical fitness and heart rate recovery from stress. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, 26(4), 566.
- Jex, S., Spector, P., Gudanowski, D., & Newman, R. (1995). Relations between exercise and employee responses to work stressors: A summary of two studies. *Occupational stress: A handbook*, 283-301.
- Hamer, M., Taylor, A., & Steptoe, A. (2006). The effect of acute aerobic exercise on stress related blood pressure responses: a systematic review and meta-analysis. *Biological psychology*, 71(2), 183-190.
- Hammen, C. (2004). Stress and depression. *Annual Review of Clinical Psychology*, 1(1), 293-319.
- Henriques, G., Keffer, S., Abrahamson, C., & Horst, S. J. (2011). Exploring the effectiveness of a computer-based heart rate variability biofeedback program in reducing anxiety in college students. *Applied Psychophysiology and Biofeedback*, 36(2) 101-112.
- Hopkins, M. E., Davis, F. C., VanTieghem, M. R., Whalen, P. J., & Bucci, D. J. (2012). Differential effects of acute and regular physical exercise on cognition and affect. *Neuroscience*, 215, 59-68.
- Jalbrzikowski, M., Sugar, C. A., Zinberg, J., Bachman, P., Cannon, T. D., & Bearden, C. E. (2014). Coping styles of individuals at clinical high risk for developing psychosis. *Early intervention in psychiatry*, 8(1), 68-76.
- Jönsson, D., Johansson, S., Rosengren, A., Lappas, G., & Wilhelmson, L. (2003). Self perceived psychological stress in relation to psychosocial factors and work in a random population sample of women. *Stress and health*, 19(3), 149-162.
- Kashihara, K., Maruyama, T., Murota, M., & Nakahara, Y. (2009). Positive effects of acute and moderate physical exercise on cognitive function. *Journal of physiological anthropology*, 28(4), 155-164.
- Kessler, R. C., & McLeod, J. D. (1984). Sex differences in vulnerability to undesirable life events. *American Sociological Review*, 49, 620-631.
- King, A. C., Taylor, C. B., & Haskell, W. L. (1993). Effects of differing intensities and formats of 12 months of exercise training on psychological outcomes in older adults. *Health psychology*, 12(4), 292.
- Knobf, M., & Winters-Stone, K. (2013). Exercise and cancer. *Annual review of nursing research*, 31(1), 327-365.
- Koivula, R. W., Tornberg, Å. B., & Franks, P. W. (2013). Exercise and diabetes-related cardiovascular disease: systematic

- review of published evidence from observational studies and clinical trials. *Current diabetes reports*, 13(3), 372-380.
- Kritz-Silverstein, D., Barrett-Connor, E., & Corbeau, C. (2001). Cross-sectional and prospective study of exercise and depressed mood in the elderly: the Rancho Bernardo study. *American journal of epidemiology*, 153(6), 596-603.
- Lazarus, A. A. (1966). Behaviour rehearsal vs. non-directive therapy vs. advice in effecting behaviour change. *Behaviour Research and Therapy*, 4(1-2), 209-212.
- Lazarus, J. (1979). Flock size and behaviour in captive red-billed weaverbirds (*Quelea quelea*): implications for social facilitation and the functions of flocking. *Behaviour*, 71(1), 127-144.
- Lazarus, R. and Folkman, S. (1992). Stress, appraisal and coping. New York, NY: Springer Publications.
- Long, B. C. (1983). Aerobic conditioning and stress reduction: participation or conditioning?. *Human Movement Science*, 2(3), 171-186.
- Lawlor, D. A., & Hopker, S. W. (2001). The effectiveness of exercise as an intervention in the management of depression: systematic review and meta-regression analysis of randomised controlled trials. *Bmj*, 322(7289), 763.
- Li, Y. C., Wang, L. M., Jiang, Y., Li, X. Y., Zhang, M., & Hu, N. (2012). Prevalence of hypertension among Chinese adults in 2010. *Zhonghua yu fang yi xue za zhi {Chinese journal of preventive medicine}*, 46(5), 409-413.
- McDonough, P., & Walters, W. (2001). Gender and health: reassessing patterns and explanations. *Social Science & Medicine*, 52, 547-559.
- McEwen, B. S., & Sapolsky, R. M. (1995). Stress and cognitive function. *Current Opinion in Neurobiology*, 5(2), 205-216.
- McGale, N., McArdle, S., & Gaffney, P. (2011). Exploring the effectiveness of an integrated exercise/CBT intervention for young men's mental health. *British journal of health psychology*, 16(3), 457-471.
- McHugh, J. E., & Lawlor, B. A. (2012). Exercise and social support are associated with psychological distress outcomes in a population of community-dwelling older adults. *Journal of health psychology*, 17(6), 833-844.
- McNeely, M. L., Campbell, K. L., Rowe, B. H., Klassen, T. P., Mackey, J. R., & Courneya, K. S. (2006). Effects of exercise on breast cancer patients and survivors: a systematic review and meta-analysis. *Canadian Medical Association Journal*, 175(1), 34-41.
- Meier, K. V. (1994). Physical activity and stress: the road not taken and the implications for society. *Quest*, 46(1), 136-145.
- Milczarek, M., Schneider, E., & Rial Gonzales, E. (2009). OSH in figures: stress at work—facts and figures. Luxembourg: European Agency for Safety and Health at Work. Retrieved from <https://osha.europa.eu/en/publications>.
- Mooy, J. M., de Vries, H., Grootenhuys, P. A., Bouter, L. M., & Heine, R. J. (2000). Major stressful life events in relation to prevalence of undetected type 2 diabetes: the Hoorn Study. *Diabetes Care*, 23(2), 197-201.
- Morgan, W. P. (1985). Affective beneficence of vigorous physical activity. *Medicine & Science in Sports & Exercise*, 17, 94.
- Matud, M. P. (2004). Gender differences in stress and coping styles. *Personality and individual differences*, 37(7), 1401-1415.
- Nguyen Michel, S. T., Unger, J. B., Hamilton, J., & Spruijt Metz, D. (2006). Associations between physical activity and perceived stress/hassles in college students. *Stress and Health*, 22(3), 179-188.
- Nicoloff, G., & Schwenk, T. L. (1995). Using Exercise to Ward Off Depression. *Physician and sports medicine*, 23(9).
- North, T. C., McCullagh, P. E. N. N. Y., & Tran, Z. V. (1990). Effect of exercise on depression. *Exercise and sport sciences reviews*, 18(1), 379-416.
- Oken, B. S., Kishiyama, S., Zajdel, D., Bourdette, D., Carlsen, J., Haas, M., & Mass, M. (2004). Randomized controlled trial of yoga and exercise in multiple sclerosis. *Neurology*, 62(11), 2058-2064.
- Pate, R. R., Pratt, M., Blair, S. N., Haskell, W. L., Macera, C. A., Bouchard, C., & Kriska, A. (1995). Physical activity and public health: a recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *Jama*, 273(5), 402-407.
- Peluso, M. A. M., & Andrade, L. H. S. G. D. (2005). Physical activity and mental health: the association between exercise and mood. *Clinics*, 60(1), 61-70.
- Pescatello, L. S., MacDonald, H. V., Lamberti, L., & Johnson, B. T. (2015). Exercise for hypertension: a prescription update integrating existing recommendations with emerging research. *Current hypertension reports*, 17(11), 87.
- Ransford, C. P. (1982). A role for amines in the antidepressant effect of exercise: a review. *Medicine and science in sports and exercise*, 14(1), 1-10.
- Rebar, A. L., Stanton, R., Geard, D., Short, C., Duncan, M. J., & Vandelanotte, C. (2015). A meta-meta-analysis of the effect of physical activity on depression and anxiety in non-clinical adult populations. *Health psychology review*, 9(3), 366-378.
- Ross, A., & Thomas, S. (2010). The health benefits of yoga and exercise: a review of comparison studies. *The journal of alternative and complementary medicine*, 16(1), 3-12.
- Rosenbaum, S., Vancampfort, D., Steel, Z., Newby, J., Ward, P. B., & Stubbs, B. (2015). Physical activity in the treatment of post-traumatic stress disorder: a systematic review and meta-analysis. *Psychiatry research*, 230(2), 130-136.
- Riebe, D., Franklin, B. A., Thompson, P. D., Garber, C. E., Whitfield, G. P., Magal, M., & Pescatello, L. S. (2015). Updating ACSM's recommendations for exercise preparticipation health screening. *Medicine & Science in Sports & Exercise*, 47(11), 2473-2479.
- Salmon, P. (2001). Effects of physical exercise on anxiety, depression, and sensitivity to stress: a unifying theory. *Clinical psychology review*, 21(1), 33-61.
- Sandlund, E. S., & Norlander, T. (2000). The effects of Tai Chi Chuan relaxation and exercise on stress responses and well-being: an overview of research. *International Journal of Stress Management*, 7(2), 139-149.
- Schneider, R. H., Staggers, F., Alexander, C. N., Sheppard, W., Rainforth, M., Kondwani, K., & King, C. G. (1995). A randomized controlled trial of stress reduction for hypertension in older African Americans. *Hypertension*, 26(5), 820-827.
- Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). Stress and health: Psychological, behavioral, and biological determinants. *Annual Review of Clinical Psychology*, 1, 607-628.

- Schuch, F. B., Vancampfort, D., Richards, J., Rosenbaum, S., Ward, P. B., & Stubbs, B. (2016). Exercise as a treatment for depression: a meta-analysis adjusting for publication bias. *Journal of psychiatric research*, 77, 42-51.
- Scully, D., Kremer, J., Meade, M. M., Graham, R., & Dudgeon, K. (1998). Physical exercise and psychological well being: a critical review. *British journal of sports medicine*, 32(2), 111-120.
- Selye H. 1956. The stress of life. New York: McGraw-Hill Book Co.
- Shimada, H., Obuchi, S., Furuna, T., & Suzuki, T. (2004). New intervention program for preventing falls among frail elderly people: the effects of perturbed walking exercise using a bilateral separated treadmill. *American Journal of Physical Medicine & Rehabilitation*, 83(7), 493-499.
- Saklofske, D. H., Blomme, G. C., & Kelly, I. W. (1992). The effects of exercise and relaxation on energetic and tense arousal. *Personality and Individual Differences*.
- Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: a review and critique of category systems for classifying ways of coping. *Psychological bulletin*, 129(2), 216.
- Simons, A. D., Epstein, L. H., McGowan, C. R., Kupfer, D. J., & Robertson, R. J. (1985). Exercise as a treatment for depression: An update. *Clinical Psychology Review*, 5(6), 553-568.
- Spalding, T. W., Lyon, L. A., Steel, D. H., & Hatfield, B. D. (2004). Aerobic exercise training and cardiovascular reactivity to psychological stress in sedentary young normotensive men and women. *Psychophysiology*, 41(4), 552-562.
- Steptoe, A., & Bolton, J. (1988). The short-term influence of high and low intensity physical exercise on mood. *Psychology and Health*, 2, 91-106.
- Steptoe, A., Kearsley, N., & Walters, N. (1993). Acute mood response to maximal and submaximal exercise in active and inactive men. *Psychology and Health*, 8, 89-99.
- Struthers, C. W., Perry, R. P., & Menec, V. H. (2000). An examination of the relationship among academic stress, coping, motivation, and performance in college. *Research in higher education*, 41(5), 581-592.
- Stults-Kolehmainen, M. A., & Sinha, R. (2014). The effects of stress on physical activity and exercise. *Sports medicine*, 44(1), 81-121.
- Tarazona-Santabalbina, F. J., Gómez-Cabrera, M. C., Pérez-Ros, P., Martínez-Arnau, F. M., Cabo, H., Tsaparas, K., & Viña, J. (2016). A multicomponent exercise intervention that reverses frailty and improves cognition, emotion, and social networking in the community-dwelling frail elderly: a randomized clinical trial. *Journal of the American Medical Directors Association*, 17(5), 426-433.
- Taylor-Piliae, R. E., Fair, J. M., Haskell, W. L., Varady, A. N., Iribarren, C., Hlatky, M. A., & Fortmann, S. P. (2010). Validation of the Stanford Brief Activity Survey: examining psychological factors and physical activity levels in older adults. *Journal of Physical Activity and Health*, 7(1), 87-94.
- Thompson, R. J., Mata, J., Jaeggi, S. M., Buschkuhl, M., Jonides, J., & Gotlib, I. H. (2010). Maladaptive coping, adaptive coping, and depressive symptoms: Variations across age and depressive state. *Behaviour research and therapy*, 48(6), 459-466.
- Throne, L. C., Bartholomew, J. B., Craig, J., & Farrar, R. P. (2000). Stress reactivity in fire fighters: An exercise intervention. *International Journal of Stress Management*, 7(4), 235-246.
- van der Zwan, J. E., de Vente, W., Huizink, A. C., Bögels, S. M., & de Bruin, E. I. (2015). Physical activity, mindfulness meditation, or heart rate variability biofeedback for stress reduction: a randomized controlled trial. *Applied psychophysiology and biofeedback*, 40(4), 257-268.
- von Haaren, B., Ottenbacher, J., Muenz, J., Neumann, R., Boes, K., & Ebner-Priemer, U. (2016). Does a 20-week aerobic exercise training programme increase our capabilities to buffer real-life stressors? A randomized, controlled trial using ambulatory assessment. *European journal of applied physiology*, 116(2), 383-394.
- Voss, M. W., Vivar, C., Kramer, A. F., & van Praag, H. (2013). Bridging animal and human models of exercise-induced brain plasticity. *Trends in cognitive sciences*, 17(10), 525-544.
- Werneburg, B. L., Herman, L. L., Preston, H. R., Rausch, S. M., Warren, B. A., Olsen, K. D., & Clark, M. M. (2011). Effectiveness of a multidisciplinary worksite stress reduction programme for women. *Stress and Health*, 27(5), 356-364.
- Weinstock, J., Farney, M. R., Elrod, N. M., Henderson, C. E., & Weiss, E. P. (2017). Exercise as an Adjunctive Treatment for Substance Use Disorders: Rationale and Intervention Description. *Journal of substance abuse treatment*, 72, 40-47.
- Wenxin, X. U., Menglong, L. I., & Jiwei, Y. A. O. (2016). Intervention of collective exercise on the mental health of elderly hypertensive patients. *Iranian journal of public health*, 45(3), 314.
- Wipfli, B. M., Rethorst, C. D., & Landers, D. M. (2008). The anxiolytic effects of exercise: a meta-analysis of randomized trials and dose-response analysis. *Journal of Sport and Exercise Psychology*, 30(4), 392-410.
- Yin, Z., Davis, C. L., Moore, J. B., & Treiber, F. A. (2005). Physical activity buffers the effects of chronic stress on adiposity in youth. *Annals of Behavioral Medicine*, 29(1), 29-36.
- Zuzanek, J., Robinson, J. P., & Iwasaki, Y. (1998). The relationships between stress, health, and physically active leisure as a function of life cycle. *Leisure Sciences*, 20(4), 253-275.



# The coach's role in shaping the attitudes and values of a competitor in Poland after World War II on the example of Wunderteam

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## Summary

The purpose of this publication is to present the concept of sport philosophy, implemented on the basis of certain values between individuals and trainers – Jan Mulak and the Wunderteam – in historically and politically challenging conditions. The article shows certain values, which were headed via outstanding individual cooperation with other great personalities from the world of sports in a way to fulfill a masterpiece – the Wunderteam. The project of creating Polish athletics team was not a programme of self-improvement of outstanding individuals, but was joint international work, which was to serve the Polish society. That concept of genius of Jan Mulak as a coordinator, and his cooperators, initiated huge progress in Polish sports.

**Keywords:** Wunderteam, values, coach, team, Mulak

The turn of the forties and fifties of the twentieth century in Poland was an extremely difficult period, that on the one hand, aroused hope in society because the war had come to an end, while on the other, it had to deal with huge losses, pain, hunger, orphan-hood and malnutrition. The war caused great damage both to infrastructure, economy, industry, and above all, it had negative impact on the mentality of the liberated man. With the end of hostilities, an intensive reconstruction of the Polish state in almost all fields began. This movement was also very visible in sports.

This article shows the influence of extraordinary coaching individuals on shaping the attitudes of Polish athletes in the fifties and sixties of the twentieth century. The research material consisted of available literature, press releases, archival newsreels and chronicle news, electronic publishing, and above all, interviews

with eyewitnesses of creating the Polish athletics team. Eminent experts spoke on this matter, and above all, witnesses of those events:

These interviews supported by source materials are a valuable information base about the formation of prominent sports personalities of the Polish national athletic team during a challenging historical period.

Difficult post-war times, when lack of money was a cause of trouble, people were malnourished, mentally and physically mutilated, there was no equipment, sport centres, facilities or qualified staff, but this did not discourage the initiators ready to rebuild Polish sport. Although the victims of war were many leading players, coaches and activists who died at extermination camps or on the battlefield, those who remained, undertook the intensive process of building Polish sport. Liberation and the end of the ban on sports was the cause of the explosion of events within recreation and sport nature. Clubs renewed their activities, sections became reactivated, and district sport associations organized a number of competitions. According to Stefan Pietkiewicz (2009), following clubs began or renewed their activities at that time.

In 1948, Stanisław Zakrzewski, who was main organizer and training course leader at the Warsaw Academy of Physical Education and Waclaw Gąssowski, Antoni Morończyk, Karol Hoffman, Marian Hoffman and Włodzimierz Druźbiak, took on the initiative to organize the second unification course at AWF Warsaw. Its goal was to coach the pre-war players who could take care of young training people. Originators also wanted to unify the system of sports training in Poland and give

**Tab. 1.** Persons giving interviews to the author in 2014

Marian Bukowiec	Dariusz Piotrowski
Zbigniew Deluga	Jerzy Skucha
Urszula Figwer	Henryk Sozański
Marek Józwik	Edward Stawiarz
Jaroslawa Józwiakowska	Zbigniew Tomkowski
Andrzej Majkowski	Zenon Ważny
Edward Młeczko	Kazimierz Zimny
Maciej Petruczenko	Ryszard Żukowski



**Tab. 2.** Renovation of sports clubs in Poland according to S. Pietkiewicz (2009)

Warsaw	February/ May 14 <sup>th</sup>	KKS Orzeł/ Legia, Sarmata, Skra, Syrena
Cracow	March	AZS, Cracovia, HKS, PKS, Legia, Wisła
Łódź	April	AZS, DKS, HKS, ŁKS
Silesia	May 12 <sup>th</sup>	AKS Chorzów, AZS Gliwice, Ligoza, Krywałt, Pogoń Katowice, and ZZK Bielsko
Gdańsk Coast	May 16'	Gedania, Flota, Lechia, PKS, Płomień, Milicyjny Klub Sportowy in Gdańsk, MKS in Sopot, RKS OMTUR
Szczecin	May 18'	Błękitni, Pionier
Gorzów Wielkopolski	June 17 <sup>th</sup>	AKS
Poznań	July	Warta, AZS, KSM OMTUR
Pomeranian	September 12 <sup>th</sup>	ZMW, KKS, GKS Grudziądz, HKS, Pomorzanie Toruń, Zryw Włocławek
Kielce		Lechia Kielce, Broń Radom, Ogniwo Skarżysko, KSZO Ostrowiec, Pronit Pionki, Star Starachowice

relevant powers to people promising success in coaching. Between October 10<sup>th</sup>-29<sup>th</sup>, 1949, the second unification course was held, the leader of which was Maurice Baquet. The workshop brought together a large number of participants. From the report of the course eyewitness – Zenon Ważny – an interesting picture of the participants was outlined:

“Among them there were the pre-war leading players: Witold Gerutto, Grzegorz Dunecki, Tadeusz Starzyński, Józef Zylewicz and Jan Mulak. And that was also the first course, to which we – students, were invited. There were four of us: Alexander Ogłobin, Stanisław Dobrowolski, Andrzej Krzesiński and me” - an interview with Zenon Ważny on August 26<sup>th</sup> 2014 in Warsaw. He is a Polish athlete, pole vaulter, player of clubs: “Ogniwo” Warsaw, “AZS” Warsaw, and “Legia” Warsaw, member of Wunderteam. Two-time Olympian from Helsinki (1952) and Melbourne (1956). Finalist of the European Championships in Stockholm (1958). Three-time Polish record-holder and four-time Polish champion. Professor of physical education, employee of the Academy of Physical Education in Warsaw, in 1981-1983 Vice President of Polish Athletics Association.

This training course has become a symbol and cornerstone for the construction of Polish sport training system, because it was the meeting point of coaches and trainers from the Polish athletic environment, who built the power of Polish athletics – the Wunderteam. In recognition of outstanding performances of Polish athletes (13-14.07.1957), on Neckarstadion in Stuttgart, the name “Sport” was used by journalists in Zurich for the first time. This name has become a symbol of Polish national athletics team in the fifties and sixties of the twentieth century.

A team of trainers and activists, who sparing no efforts have set themselves a clear goal and with methodical precision implemented it, is considered creators of the success of this extraordinary phenomenon. They were: outstanding pre-war intellectualist and polyglot – Waław Gąssowski, a representative of the pre-war intelligence, a similar class man – Witold Gerutto – the pre-war European runner up in the decathlon. But there was also a whole group of random individuals, who were looking for their place in sport, because they were people without any profession. A simple worker Paweł Kozubek, who later became the coach of the national team in the hammer throw. Tadeusz Starzyński – later educator of the world record holder in the triple jump Józef Szmidt, who was a railwayman with no education and had never coached before. He was only trained under Mulak’s aegis and gradually pursued great sport. Zygmunt Zabierzowski was another representative of the pre-war intelligence and also one of the participants, and most of the heroes from the Warsaw Uprising, and later a coach with huge merit in Cuba. “It was such a jumble of extremely interesting people who would have never probably got along with each other if not for the leadership of Mulak, who was able to organize it all. His leadership was clear due to his organizational skills. He was able to take control over all, maybe because he did not have bad habits: he did not drink nor smoke, and men from that period, especially after the war circumstances, were usually people with nicotine and alcohol addiction.” – an interview of the author with Maciej Petruczenko – press journalist and TV commentator on November 5<sup>th</sup>, 2015 in Warsaw.

This genius of Jan Mulak manifested primarily in excellent work organization. He took over the helm of

the team leader and built a coaching collective. He could find a common goal for trainers of different athletics disciplines. People from different backgrounds with strong, decisive attitudes, through the authority of Jan Mulak, did not compete with each other, to the contrary, they became a team of friends seeking to lift Polish athletics to the heights of Europe and even the world (Mulak 2006).

Where did Jan Mulak acquire the experience to lead the team and the desire to shape human characters? According to Józef Tischner (1993), every acquired value of human experience, his intellect, ability to make informed choices, influences decision-making. Values are the basis of all choices, they determine attitudes towards people and things and affect emotions and self-esteem. Józef Tischner (2000) in "Świat ludzkiej nadziei" [The World of Human Hope] has shown values as a natural, appropriate human environment. In "Etyka wartości i nadziei" [The Ethics of Values and Hope] (Tischner 2001) he emphasized that man lives among values. They are a kind of background that appears before and behind a human being and inspires his actions.

Similarly, Józef Lipiec (2001) emphasizes that Man in a given area is within the range of the various influences, interactions of both we consider positive and those that have a negative or even destructive effect. These signals reach the unit and continue to operate among it, and there is no way to determine the limits of this effect. According to Józef Lipiec, this area or perhaps the more accurate term – this world – is boundless.

Jan Mulak's value in the world was influenced by many of the experiences he had accumulated through his life. Since his school years, he had paid great attention to learning, gaining knowledge and taking care of his body. As a student, he learned sports rivalry and his passion for recreation. These activities simultaneously complemented the social functions of a sports activist (Woltman, Zaborniak 2006). Already in junior high school, he became president of the School Sports Club. His first successes in sports were in swimming and athletics. On his way, he met outstanding pre-war sports coaches A. Cejzik and J. Kałuża (Mulak 2006). As a teenager, he became a "Skra Warszawa" player, and in less than twenty years, he became its vice president. At the same time, he led a sports section in *Dziennik Ludowy* [The People's Daily]. He also spent the war years very actively, he was active in the opposition, political and military conspiracy (Mulak 1984). He did it so that after the war, he would rebuild structures in the PPS ranks (Mulak 1990). He acted in strict leadership of the party. As an opponent of the PPS and PPR reunification in 1948, he was declared an enemy of the people and of the Soviet Union and therefore, he had to resign from active politics. He found his place in sport. Throughout his life, he was guided by values, and even in the face of heavy war experiences, when his and his family's life was threatened, he never did anything against his self-implemented rules (Mulak 1990).

Roman Ingarden (1987) believed that a person's life without value cannot be happy. Only the ability to live,

to surrender and to realize values will make him happy. Mulak, in his life, followed the instructions dictated by his own value system. Such values were posted by Józef Lipiec (2014, p. 21):

"Courage (in toil of fight), dignity (of each player), freedom (in the self-realization and focused worthy purposes), friendship and respect (beyond all divisions), justice (in evaluations), equality (at the start and measures of actions) and finally, the most famous of them, honesty in the game (i.e. fair play), requesting not only discipline from themselves and others, but also responsibility for the equal treatment of one's self and others (...)"

Reference to these values by coaches and realization of a common goal became the basis of wonderful friendships in sports. The result of this collaboration was the creation of Polish athletics schools. During the first sport camps in the Karkonosze Mountains, Jan Mulak introduced the principle of information exchange between coaches. Evening coaching team meetings, sharing insights and analysis of progress gave rise to cooperation of professional teams that, in the fifties and sixties of the twentieth century, created the Polish training concept. Through the exchange of coaching insights, creating an atmosphere of friendship, cooperation and shared responsibility, expertise in various disciplines was systematized and popularized. Experience through open discussion, often very turbulent, was gained, which resulted in the creation of an excellent team of professionals, athletics coaches. Common discussions were the basis for building the Polish school in the triple jump, javelin, hammer throw and races. Due to the actual synthesis of skills, the "Polish training concept" was created." The role of Jan Mulak was not to be underestimated in this activity.

Mulak being neither an outstanding runner, nor a great specialist, was self-taught, but his running school involved interval training, running in nature, and the Karkonosze Mountains, which he invented for athletics. And there were other places for athletes: at first Walcz, then Spała with Gerutto and Wunderteam (Mulak 2006). "Of course, it was not Mulak only, but also Starzyński, Szelest, Kozubek, Zieleniewski, Gąssowski and many others. It was a great team, on which none were outstanding players, but Jan Mulak perfectly combined it all." – an interview of the author with Andrzej Majkowski on 14<sup>th</sup> September 2015 in Warsaw. He is a Polish diplomat, an official, the former Undersecretary of State in the President's Office. In 1969-1972, President of the Polish Athletics Association.

The fact that they all believed in success despite that this belief seemed unreal when analysing the reality, was illustrious for Jan Mulak and his team. They began working with young athletes from raising overall physical fitness and creating individualized training plans. For those players, personal plans that far exceeded their current capabilities were prepared, but militarized in the system of preparation, which in most cases, provided the first opportunity for systematic, intensive training, which brought forward more than the expected assump-

tions. A significant role in the planning of sport training by Jan Mulak was played by Baquet training, i.e. proposal to take athletic training outside the sport stadium using “fartlek” [running fun], especially that Mulak had very similar insights from their running training. The use of natural terrain conditions, height differences: run-downs or run-ups, diverse grounds: soft, hard, sand, meadow, ploughed field, track or bog, required the player to match muscle tone to changing conditions. According to the authors of this concept, the lack of monotony encouraged harder work, and changing the ground caused the player to quickly focus on a difficult surface to be able to relax when the terrain is easy. This method, according to Jan Mulak, was considered the most effective (Pietkiewicz, 2006). When analysing contemporary training methods, the fact that Mulak relied on the “fartlek” Swedish form of improvised training, popular on its basis, he developed the Large and Small Fun Race, where the Small Fun Race was “fartlek” supplemented with terrain athletics, and in the case of the Large Fun Race, it was completed with work on the pace. The use of this method allowed better results because it affected the asthenic generation that was only “recharging its batteries” after the war. Organisms malnourished, nervous and often ravaged by disease could participate in training, which gave them the opportunity to be close to nature and allowed to adjust the pace and intensity to the individual condition of a player. He placed a lot of importance on the growth of motor abilities among sportsmen and the improvement of co-ordination, which was obtained through the use of a variety of exercises, and in particular, activities using hurdles.

Action set forth was to improve physical condition, to deal with the increase in intensity. The task of trainers Zygmunt Szelest, Witold Gerutto and Jan Mulak was to develop the largest possible battery for improving for field, hurdle exercises, which were to serve all, both runners and technical competition players. Trainers did their job creating a specific set of specialist exercises, which was regularly replenished for many years. They were the masters of using the advantages of the field brought by mild and varied routes of the Karkonosze Mountains. They were also the authors of new groups of exercises that, due to the lack of equipment, were based on what was provided by nature.

“Is it possible to imagine that the javelin goes into the forest and within the framework of training, pounds an axe into a tree? And then all the specialized training Mr Szelest ran, was like the story with the axe. And so they trained. It was not specialized training as understood today, but it was based on natural predispositions and natural conditions of training.” – an interview of the author with Henryk Sozański on August 26<sup>th</sup> 2014 in Warsaw. He is a Polish athlete, former Polish junior record-holder in the high jump, representative of the country.

Also, sport camps attended by representatives of the Polish Athletics in the fifties of the twentieth century were much different than current standards. The story of the first sport meeting for Polish athletes in the beau-

tiful forests of the Karkonosze Mountains was told in an interview by a participant of that memorable event – Zenon Ważny. In January 1952, during preparation for the Olympic Games in Helsinki, one of the organizers was Jan Mulak – a man with charisma. Then, a winter camp was organized in the Karkonosze Mountains in Sosnówka. Athletes lived there in houses, where besides cots, there was virtually nothing. Zenon Ważny with Janusz Sidło and Andrzej Krzesiński along with three other residents, lived in a house named Konwalijka (*Little lily-of-the-valley*). The house consisted of three small rooms with a large room – living room – in the middle, and with a little stove in its centre. It was a metal-cast stove with an oven for heating. It was the only source of heat then, and it was winter, and the only source that was used for water heating. There was no running water, but there was snow all around. “We took a huge metal bowl, acquired a lot of snow, left it on the stove and we went training. When we returned sweated, we took off the clothes and hung around. The bowl with hot water served us to wash up with a wet towel and soap. Those were our conditions for Olympic preparation ..., but what was just so interesting? There were no complaints that the conditions are bad. No-one complained.” – an interview of the author with Zenon Ważny on September 26<sup>th</sup> 2014.

Preparation at sport centres, which are today famous for excellent conditions, and in which representatives prepare for the most important sporting events of the twenty-first century, looked similarly. But before that, future Wunderteam masters were the authors of their training base buildings. Spała or Wałcz are centres, which once had been built – racecourses, springboards, viewpoints – and created by famous Polish athletes competing for medals at major sporting events: the Olympics and European Championships: Elżbieta Duńska, Jerzy Chromik, Zdzisław Krzyszkowiak, Janusz Sidło, Zenon Ważny, Henryk Grabowski, Gerard Mach, etc. To implement training – as Urszula Figwer said in an interview – first a place had to be prepared:

“In the morning, we came to the stadium and did not know what to do, whether to ride a roller, because the pitch was so furrowed by wild boars that it was impossible to get around. There were a lot of wild boars then and instead of training, we took shovels and rollers in order to prepare a place for training. We had no room, no gym, but the imagination of coaches allowed to replace such a lack of what could be found in the area. There was often no hot water. I remember the jumping track, the one where Elizabeth Krzesińska or triple jumper Joseph Schmidt trained; it was such a primitive sandpit. Despite these difficult conditions, it turned out to be a very high form in sport and climbing to the top can be achieved”.

Although the fact that coaches’ meetings were held in Spartan conditions, coach Mulak claimed they were good, because such work shaped good character. At that time, it was common practice for players to prepare a track, jump, or viewpoint for training by them-

selves. The duty of the runners was to water, to brush or to roll the track. Zenon Ważny talked about preparing the landing area. They were preparing a place to train pole vault of the tiles from the burned Mościcki Palace in Spala. They broke these tiles into meal and they made a jump. High jumpers had a recess and a sandbox at the old tennis court – they trained there.

Athletes acted out the role of judges during competitions. Kazimierz Zimny also talked about primitive conditions, staggered bunks that served for sleeping. Initially, the roof was covered with a thatch, and then after the fire, the storey was build and military baths created. The food was also primitive: cabbage or pork with sauerkraut. "I had pull in the kitchen with the boss, and I also appeared from behind getting a glass or a cup of cream. As the summer was very hot, instead of different drinks, we used to eat a spoonful of salt to maintain some water in the body. We coped as we could". - an interview of the author with Kazimierz Zimny on May 23th 2015.

All the players recall the period of training and competing on the Wunderteam with nostalgia and at the same time, pay attention to the excellent atmosphere that prevailed within the team. This fact is also confirmed by the statement of the excellent Polish athlete Jarosława Józwiakowska:

"The Wunderteam was the best time of my life. It was a great sports team, everyone was treated like family, cheering on one another, and encouraged one another when something went wrong. We just felt a unique bond between us. The starts were set in a different way then because we had a lot of interstate meetings and matches every year. These matches approaching us meant that we were a unity. In general, contact between coach and players was almost paternal, and this was true virtually in all disciplines, not only in racing."

The atmosphere on the team of Polish athletes and care of coaches about players was illustrated in an interview by Zenon Ważny:

"Coaches who led training sessions with us – it was a group that had only been developed – formed a kind of a mini environment. Besides, the times were different. A man tried to find colleagues, friends, because then it was called life". There, in this environment of coaches, a certain concept had been created, some kind of programme or project of athletic development, which was tested. The headquarters were located in the cottage, which was called *Little chocolate*, where trainers lived. There, Jan Mulak convened daily evening meetings with coaches lasting several hours, late into the night. During these meetings, they created a concept of how to build athletics, how to prepare players, and what the teaching methodology should be like. The pre-war knowledge was such that training had to start six weeks before the competition. During the first few years after the war, knowledge from the Soviet Union was used, but it did not correspond to the mentality of Poles, nor the concept stating that everyone is the same. In the Soviet Union, all performed the same job, and here in Poland, coaches noticed that everyone was different.

The development of players was possible thanks to continuous improvement of the coaching staff. Care for the individual sections was gradually passed on to younger coaches or instructors, who together with Jan Mulak and Witold Gerutto, constantly improved their skills. They were sure of their professionalism and were not afraid to experiment. They were most often players, who for various reasons, had to resign from their sporting career. These included: Tadeusz Kępka, Zygmunt Zaremba (long-distance), Emil Dudziński, Andrzej Piotrowski and Zygmunt Zabierzowski (sprints), Emil Kozubek (hammer), Zygmunt Szelest (javelin) and Tadeusz Starybrat-Starzynski (triple jump). The other jumpers were continuously supervised by Marian Hoffman, Karol Hoffman and Antoni Morończyk (pole vault). Hurdlers and second-raters, who ended their career early, joined the coaching staff: Edward Bugała, Hubert Gralka, Roman Korban, Edmund Potrzebowski and Włodzimierz Puzio (Mulak 2006). The extended staff did not allow for direct competition between players, but thus, too early depletion of the body did not occur. Systematic improvement of physical fitness and harmonious pursuit of specialization was characteristic of the training thinking of Jan Mulak. Due to this, sport careers of players did not explode prematurely to burnout (Mulak 1988) as quickly as it has happened in the example of players from France or Germany. In these countries, the athletics staff changed every two or three years, while in Poland, players had beautiful, long careers. Examples of such long-lasting sporting careers were: Janusz Sidło Olympic Games (1952 Helsinki, 1956 Melbourne, 1960 Rome, 1964 Tokyo, 1968 Mexico), Tadeusz Rut (1956, 1960, 1964), Olgierd Cieplý (1960, 1964), Edmund Piątkowski (1960, 1964, 1968), Józef Szmidt (1960, 1964, 1968), Ważny Zenon (1952, 1956), Jerzy Chromik (1956, 1960), Zdzisław Krzyszkowiak (1956, 1960), Kazimierz Zimny (1956, 1960), Marian Foik (1956, 1960, 1964), and among women: Elżbieta Krześcińska (1952, 1956, 1960), Urszula Figwer (1956, 1960), Teresa Cieplý (1960, 1964), Barbara Sobotta (1956, 1960, 1964) and Maria Piątkowska (1952, 1960, 1964). (Głuszek, 1988, p. 73- 80)

It is essential that trainers, in addition to working on improving physical fitness, were involved in shaping social attitudes and the development of their young subordinates. The athletic teams accepted very young people, usually from small towns or villages. For them, the adventure with sports, with athletics, opened new perspectives, gave them a chance for a so-called "better life". Therefore, coaches who were authorities for these young players, had a special role to play. Despite the enormity of the work they were putting into physical preparation, they did not neglect the spiritual realm. A particular person marked out by interviewers was John Mulak. As a man of many interests, having recognized life experience as a prominent political PPS activist and an active participant in the Warsaw Uprising behind him, he took on the role of educator and teacher with great reverence.

He activated young players to get to know other, non-sport related values such as culture, architecture, nature. In the intervals between starts or camps, he familiarized them with art and monuments, visiting places, where they were currently staying. He was himself a very well-read man who developed their interests and passions. Together with his colleagues, he showed them Poland, Europe and the world, but also taught them about life in this world. As mentioned by Urszula Figwer (April 8<sup>th</sup> 2015 in Cracow): "he always knew a lot about each city. He always had impressive knowledge of the places we were staying". Jan Mulak highly appreciated aesthetic values, which are the basis for the development of creative activity. He wanted to show his pupils a different way of development of human personality, which would awake the ability to see beauty and in addition, to train the body, educating the young, post-war generation. As a committed educator, he wanted to raise motivation, to bring perspective, and to show something more than what young people could learn in their hometowns and from school. For Jan Mulak and coaches from the training staff of the postwar Polish athletes, man was very important (Mulak 1984). They were aware of the comprehensive impact of the coach on a player and knew how effective it is to shape a man through sport. They knew how important such personality traits as diligence, conscientiousness, sensitivity to the needs of others, openness, patience, responsibility, creative thinking, consistency, ability to observe, ability to react in the case of the destructive impact of individual on a group, no evidence of selfish features and resistance to stress are. Trust in the relationship between players is essential, because a player is often brought to the limit of human capabilities with simultaneous maximum mental and physical requirements. They wanted to use their own example to inculcate the virtue allowing young athletes to make the right choices in life. Their value system was based on honour, national pride, beauty, joy, fame, respect and amateurishness, and they exposed these attributes within their educational work.

The great determination of Jan Mulak and his colleagues brought about excellent results. Members of the Wunderteam athletics team gained great successes in sport both on the European arena and world-wide stadiums; they were Olympic Champions: Elżbieta Krzesińska in long jump (Melbourne 1956), Zdzisław Krzyszkowiak in the 3000 m steeplechase (Rome 1960), Józef Szmidt in the triple jump (1960), the women's 4 x 100m relay with Teresa Cieply, Irena Kirszenstein, Halina, Górecka, and Ewa Klobukowska (Tokyo 1964), Józef Szmidt in the triple jump (Tokyo 1964).

Olympic runner-ups: Janusz Sidlo in the javelin throw (Melbourne 1956), Jaroslawa Józwiakowska in the high jump (Rome 1960), Elżbieta Krzesińska in the long jump (Rome 1960), Irena Kirszenstein in the 200 m run and the long jump (Tokyo 1964), Teresa Cieply in the 80 m hurdle race (Tokyo 1964), men's 4 x 100m relay with Andrzej Zieliński, Wiesław Maniak, Marian, Foik and Marian Dudziak (Tokyo 1964).

Bronze medals at the Olympic Games were won by: Teresa Wiczorek, Barbara Janiszewska, Celina Jesionowska, Halina Richter in the women's 4 x 100m relay (Rome 1960), Kazimierz Zimny in the 5,000 m run (Rome 1960), Tadeusz Rut in the hammer throw (Rome 1960), Ewa Klobukowska in the 100 m run (Tokyo 1964), Andrzej Badeński in the 400 m run (Tokyo 1964) (Głuszek 1988).

Many of the medals were also occupied by Polish athletes of the fifties and sixties of the twentieth century at the European Championships winning athletics international matches. However, they were gained not only in sports by joining the athletics team of Wunderteam. After the end of their careers, most of the young athletes started to work in their chosen fields with success (Mulak 1988). They were, among others, scientists, doctors, sport activists, teachers – systematically implementing the selected target just as they learned from their coaches. Just as in a sport floodplain, they were fighting for their place on earth and even beyond. Friendships that had been established at the time of their competition remained in their adulthood. They were happy to meet after years reminiscing about their successes. They drew conclusions and wanted to share their experiences from a new perspective. In memoirs, they worshiped their coaches to give thanks their selfless work. Extremely eloquent are the words of Urszula Figwer, who as a guest at one of the seminars by Prof. Józef Lipiec, Ph.D. in Cracow, who said: "we became those as he shaped us" about Jan Mulak.

The first, post-war training team, which consisted mostly of pre-war players, worked in an atmosphere of cordiality, friendship and kindness. Each member of the staff carried out their tasks and willingly faced confrontation and exchanged information with other coaches believing that their common experiences and observations would help the whole group of athletes of all disciplines to rise to a sufficiently high level of fitness (Mulak 1978). Among the trainers, the obvious leader - coordinator after the departure of Waclaw Gąssowski (1952), became Jan Mulak who unified a group of excellent professionals and motivated others to undertake various activities, e.g. dissemination of developed knowledge and skills. This work brought about more and better results. Players who were then the asthenic post-war generation, had to undergo specialized training that enabled them to rise their organisms to a higher level without the risk of overloading and excessive overexploitation. The group of coaches – the best specialists in Polish athletics – developed methods and measures to ensure the proper development of players. Success did not come immediately, they had to wait a few years for it, but they had a rational premises that testified the validity of their choices. Jan Mulak, together with the team of coaches, achieved great success, which probably exceeded the expectations of various professionals, which was a great surprise.

Man was important to Mulak. That is why he cared for the trainer to be a proper educator at the same time (Mulak 1988). Essential qualities a trainer should have

and the values that should guide him/her according to Mulak are: sensitivity to others, openness, patience, responsibility, creative thinking, consistency, observation, ability to react in the event of destructive influence of an individual towards the group, resistance to stress. The times in which he was living were not easy, even ruthless. To succeed, he often faced power. He was a strong man with strong character, always acting in accordance with his values. He was a trainer – a teacher (Woltman, Zaborniak 2006), who was selfless, diligent, solid, reliable, accurate, disciplined and honest. He was distinguished by dignity, honour, prudence, ambition and respect. He was brave, he could stand against anyone, often defending his co-workers (Mulak 2006). For athletes, he was an authority who, by his own example, taught them to choose the right path in life. Jan Mulak was a positivist who, despite circumstances and conditions, tried to achieve a goal. He believed that even in extremely difficult conditions, the conditions of Polska Ludowa [The People's Republic], people should live actively and to do their work, especially in such areas that may become a showcase of the Polish nation on an international stage. And sport gave that possibility.

## References

- Głuszek Z., *Polscy olimpijczycy 1924-1984*, Warszawa 1988
- Ingarden R., *Człowiek i jego rzeczywistość*, [w:] *Książeczka o człowieku*, Kraków 1987
- Jurek T., Krzewiński I., Woltman B. (red.): *Lekkoatletyka w Polsce 1919 – 1994*, Warszawa 1994
- Lipiec J., *Symposium Olimpijski*, Kraków 2014, p. 21.
- Lipiec J., *Świat wartości*, Kraków 2001
- Mulak J., *Bieg mimo przeszkód*, Warszawa 1988
- Mulak J., *Dlaczego?*, Warszawa 2006
- Mulak J., *Narodziny Wunderteamu*, Warszawa 1984
- Mulak J., *Polska lewica socjalistyczna 1939 – 1944*, Warszawa 1990
- Mulak J., *Bieg mimo przeszkód*, Warszawa 1988
- Mulak J., *Uwagi o treningu*, *Lekka Atletyka* 7 Listopad 1956 r. p. 21
- Mulak J., *W służbie sportu*, Warszawa 1978
- Pietkiewicz S., *Wkład Jana Mulaka w powstanie polskiej szkoły biegów* [w:] Woltman B., Zaborniak S. (red.), *Jan Mulak. Życie dla sportu*, Rzeszów 2006 p.51
- Pietkiewicz S., *Lekkoatletyka polska w latach 1919- 2009*[w:] D.Grńberg (red.) *PZLA, 90 lat polskiej lekkoatletyki*, Wydawnictwo PZLA, 2009
- Tischner J., *Etyka wartości i nadziei*, Poznań 2001
- Tischner J., *Myslenie według wartości*, Kraków 1993, p. 522
- Tischner J., *Świat ludzkiej nadziei*, Kraków 2000.
- Woltman B., Zaborniak S. (red.), *Jan Mulak (1914 – 2005). Życie dla sportu*, Rzeszów 2006

## Interviews of the author with:

- Urszula Figwer on April 8<sup>th</sup>, 2015 in Cracow.
- Jaroslawa Józwiakowska on May 23<sup>th</sup>, 2015 in Warsaw.
- Andrzej Majkowski on September 14<sup>th</sup>, 2015 in Warsaw.
- Maciej Petruczenko on November 5<sup>th</sup>, 2015 in Warsaw.
- Henryk Sozański on August 26<sup>th</sup>, 2014 in Warsaw.
- Zenon Ważny on August 26<sup>th</sup>, 2014 in Warsaw.
- Kazimierz Zimny on May 23<sup>th</sup>, 2015 in Warsaw.



# Sports press coverage of Polish female athletes during the Olympic Games in Rio de Janeiro<sup>1</sup>

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## Summary

During the last Olympic Games in Rio de Janeiro, the Polish female representatives won significantly more medals compared to men. This fact made the authors examine whether female athletes received proportionate media coverage compared to men. In the course of research, articles from the two largest Polish dailies were analysed (“Gazeta Wyborcza” and “Fakt Gazeta Codzienna”). With the use of content analysis, 197 articles were analysed in order to check whether any quantitative and qualitative differences can be observed in describing women’s and men’s sport. The results show underrepresentation of press coverage regarding women’s sport. The results of qualitative analysis also point to a number of differences when portraying women’s and men’s sport.

**Key words:** sport, media coverage, press, Olympics, femininity

When commenting on the invisibility of sportswomen in the media, which has not changed for years, Mary Jo Kane, one of the most recognised researchers on the issue of media coverage on women’s sport, said that: “the better sportswomen get, the more the media ignore them” (Kane, 2013). Other researchers focused on the issues related to portraying women’s sport in the media stress the unchanged-for-years tendency to marginalise women’s sport and trivialise their accomplishments (Cooky et al., 2015, Cooky et al., 2013, Fink, 2015). They also notice that even if the amount of media coverage on women’s sport goes up, it does not mean that the sport is portrayed properly, i.e. by appreciating women’s progress and giving up on stereotypical presentations (Bernstein, 2002, Fink, 2015). The issue of underrepresentation regarding media coverage of women’s sport is especially interesting in the context of the last Olympic Games and winning eight Olympic medals by Polish sportswomen compared to three in the case of men. The journalists and commentators of the Polish Olympic representation claimed that “Polish sport is based on women” (Bares, 2016, Zimoch, 2016, Nowakowska, 2016). That makes it even a more interesting task to check whether Polish female athletes received media coverage for their achievements during the Olympics which is at least comparable to that of men. Thus, the fundamental purpose of this article is to analyse the media coverage concerning women’s and men’s sport during the Olympic Games in Rio de Janeiro based on the two most popular Polish dailies, namely “Gazeta Wyborcza” and “Fakt Gazeta Codzienna”. The article will also discuss reasons for marginalisation of women’s sport in the media.

## Women and the Olympic Games

There are more and more females entering subsequent Olympic Games. The London Olympics was the first one in which each country was represented by both women and men, with women taking part in all competitions. In the case of the US representation, more women than men competed for the first time, and women also won more medals (Kane, 2013). In Rio de Janeiro, sportswomen made up 45% of all contestants (International Olympic Committee, 2016). During the Winter Olympics, the number of sportswomen is smaller, however, it is becoming increasingly higher (40.3% in Sochi, 40.7% Vancouver and 38.2% Turin, 36.9% Salt Lake City, respectively) (International Olympic Committee, 2016). Although the representation of Polish female participants during the last four Olympics was always smaller compared to men (Vancouver 45%, London 43%, Sochi 41%, Rio 42%), it is women who won more medals (19 medals for women, 14 for men). Taking into account the constantly increasing statistics for the participation of women in the Olympic Games and other globally-recognised sport events, media coverage concerning women’s sport seems to be an interesting subject to analyse.

## The quantitative differences in media sport coverage – overview of literature

Social researchers have devoted plenty of space to examining gender inequalities in media sports coverage.

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The Olympic Games and related television coverage have been thoroughly analysed, among others, due to the number of viewers which cannot be compared with any other sports event (Billings et al., 2008, Angelini & Billings, 2010, Angelini et. al., 2012, Billings, 2008b, Billings & Eastman, 2003). Despite the fact that female athletes are given more attention during the Olympics than in the remaining parts of the season, still, the interest is not representative compared to the number of female representatives at the Olympics.

The studies on sport coverage during the Olympics also point to promoting men over women. In Vancouver, men were given 3/5 of the broadcasting time, after excluding mixed-gender competitions (Angelini, MacArthur & Billings, 2012). During the Olympics in Turin, this number was about 60% (Billings et. al., 2008) and in Salt Lake City, about 65% of the broadcasting time analysed (Billings & Eastman, 2003). When also comparing the broadcasting time devoted to women and men during the Summer Olympics in 1996, 2000 and 2004, Billings also points to modest differences of a few percent (4-5%) and much more substantial differences (23%) during the Winter Games in 1998, 2002 and 2006 (Billings, 2008b, p. 112-118). The differences in the amount of broadcasting time with regard to gender may be justified by the larger number of disciplines considered to be feminine during the Summer Olympics, which have been accessible to them for a long time (Billings, 2008b, p. 116). The fact that during the Olympic Games women may count on more coverage is also connected with representing a given country and not with valorisation of femininity in sport (Wensing & Bruce, 2003, Hedenborg, 2013).

Initially, press research also demonstrated underrepresentation of women. More recent studies, however, point to the media coverage which is proportional to the number of sportswomen. When examining the British press, King demonstrated continuous occurrence of gender differences between the years 1948 and 1996, and a fundamental change in the trend in 2004 (King, 2007). Comparing five papers in the USA, K. Kinnick demonstrated lack of any quantitative differences in gender-related press coverage during the Olympics in Atlanta (Kinnick, 1998). Also, Vincent et al., when comparing papers in the USA, UK and Canada, demonstrated that women receive comparable media coverage (Vincent et al., 2002). In a study concerning five European countries, Capranica et al. point to the press coverage which is proportional to the number of women competing in the Olympics (Capranica et al., 2005). In turn, O'Neill and Mulready demonstrated that after the games, the coverage on women's sport goes back to the number from before the games (O'Neill & Mulready, 2014).

The studies of sport media coverage aside from the Olympic time indicates much lower interests in women's sport. They revealed that women's sport is underrepresented and sport coverage on women is burdened with gender-based prejudices (Cooky et. al., 2015, 2013

Billings & Young, 2015, Turner, 2013). The longitudinal study by Cooky et al. has shown that in 2014, only 3.2% of the airtime (local Los Angeles network affiliates) for the sports news was devoted to information on women's sports. During 25 years of research, only in 2009 did the surveys provided lower values (Cooky et al., 2015). As Kane comments on the obtained results of research, it is surprising, since 40% of sportspeople in the USA are women. According to the researcher, the obtained results prove that women are not so much ignored in the media but rather false narration is created, demonstrating that women are either not interested in sport or not talented enough (Kane, 2013, p. 233).

Research concerning Polish media also indicates significant underrepresentation of women's sport. The research concerning the TV sport news in 2008 has shown that 93% of the total transmission time was devoted to men's sport (Kluczyńska, 2011, p. 390). The results of *The International Sport Press Survey 2011* concerning "Gazeta Wyborcza", "Fakt" and "Głos Wielkopolski" analysed from April to May 2011 have shown that 85% of press articles concerned men's sport (Jakubowska, 2015). The results of the four-year long research concerning sport articles in *Gazeta Wyborcza* in the years 2010-2013 look similar. In each year, the percentage of articles about women's sport did not exceed 15.3 % (Dziubiński, Organista, & Mazur 2018).

In sports media, gender differences are reproduced by dividing sport disciplines into those which are stereotypically associated with femininity and those which are considered as inappropriate for women (Koivula, 2001, Jakubowska, 2014, p. 464-479). Doing sports by women is approved as far as sport disciplines require a slim figure, grace of movements or a sense of rhythm (individual sports: rhythmic gymnastics or figure skating). Sport disciplines in which physical strength is employed, stamina and aggression required, are not considered as sports appropriate for women in common perception (team sports - collision and contact sports) (Cooky, et al. 2015, 2013, Jakubowska, 2015).

Underrepresentation of coverage takes place despite the constantly increasing interest in women's sport and physical activity more and more frequently undertaken by women. A report by the Central Statistical Office (GUS) from 2013 shows that 43% of women and 48% of men take part in sport and recreation activities, whereas 18.9% of Polish women and 21.8% of Polish men do it on a regular basis (GUS 2013). Women are more frequently sport consumers both directly and via the media (Meier et al., 2015, Clark et al., 2009). According to the research by the Institute for Market and Social Research, in 2012, 64% of women in Poland declared watching TV sports news, and a year later, 74% (IBRIS, 2014). Despite the data proving the increasing interest of women in sport, their experience is often ignored. In this context, Pfister writes about refusing women a "cultural ticket" to be a sport fan (Pfister et al., 2013) and Jones about functioning outside the "imagined community" of fans (Jones, 2008).

## Qualitative differences in media sport coverage – overview of literature

The results of the qualitative research on media coverage are also very disturbing. If anything is written about women's sport at all, it is usually in a manner which is different when writing about men's sport. Janet Fink mentions the five most popular practices which are different for the presentation of women's and men's sport (Fink, 2015). Gender marking refers to a situation of stressing the participation of women in specific competitions in order to mark the difference between women's and men's sport. This results from treating men's sport as a standard and reproducing stereotypical claims that women's sport has secondary status. Another practice is to infantilise sportswomen. Journalists often use only their first names or call them "girls" (Daddario, 1994). This can be rarely observed in the case of men. Here, martial metaphors are often employed. The vocabulary is stylised, full of references to famous battles or war heroes, which sustain the myth of a man-warrior (Sabo & Jensen, 2002, Vincent, 2004, Dziubiński et al., 2015). Additionally, in the case of women, their relationship with family is emphasized, giving the readers an impression of dependence and the need to be taken care of. Such language sustains the low status of women in sport (Ducan et al., 1994). The third typical practice is to minimise commentaries about abilities of female contestants and maximise such content in the case of men's sport. Failures of sportswomen, emotionality or the fact that their success depends on the work done by their coaches are often emphasized. In the case of men, their involvement, commitment or extraordinary abilities are emphasized much more frequently (Angelini, MacArthur & Billings, 2012, Billings & Eastman, 2003). Ambivalence was also described as a method of portraying sportswomen. Positive comments are combined with information undermining the status of women. As Eagleman noted when summarising her research, ambivalence shows the power of the media which minimises the achievements of female contestants (Eagleman, 2015). Another framework distinguished by Fink which is used to portray sportswomen concerns stressing their femininity and heterosexuality. Their beauty or physical appearance are commented on, and their out-of-sport roles (of mothers, wives or girlfriends) are mentioned. Emphasizing the attractiveness of female athletes refers to male viewers to whom the media coverage is adapted (Fink & Kensicki, 2002, Prinnen, 1997, Kane, 1996, Daddario, 1994). For example, Bissel and Duke proved that the video coverage of women's beach volleyball concentrates on their physicality, which was perceived as a strategy for attracting the viewers to this sport (Bissel & Duke, 2007). Jones demonstrated that the television coverage of figure skating was focused on the contestants' faces 30% more frequently compared to men, which the author took as a technique aimed at emphasizing their sexuality and emotionality (Jones, 2011). The last fun-

damental difference between women's and men's sport described by J. Fink refers to a different method of production of sports events. The information about women's sport is often reduced to a simple report of results of a given competition, while in the case of men's sport, deepened reviews and presentations of sportsmen appear much more often. This makes women's sport seem boring (Cooky et al., 2015). As Messner noted, sportswomen are much more rarely employed to promote and advertise sport (Messner, 1998), which gives the impression that women's sport is less interesting. When doing research on the method of producing athletics competitions during the Olympics in Athens, Greer and her female colleagues proved that more time, means and ingenuity were devoted to men's competition which made, in the authors' opinion, women's sport seem "naturally less exciting" (Greer et al., 2009).

## Reasons for underrepresentation of women's sport in the media

The presented research results which prove marginalisation of women's sport in the media are justified with the limitations resulting from the need to care for the viewing figures and financial profits. It seems to be a common belief among sport producers, journalists and commentators, that only men are interested in sport and thus, media coverage should be tailored to their needs. Social researchers point to the fact that such beliefs are shaped by the patriarchal structure of contemporary societies which values the masculine more (Connell, 1998). Sport in its current form was created in the 19<sup>th</sup> century by men, and its main purpose was to sustain the conviction of male greatness (Dworkin & Messner, 2002). Due to the importance of physical abilities, it is perceived as reproducing the natural gap between the sexes and not their social structure. The frailty myth of women supported by the 19<sup>th</sup> century medical discourse even consolidated the belief that physical effort is not recommended for women (Jakubowska, 2014, p. 33-41). Nevertheless, the data concerning physical activity as well as direct and indirect sport consumption shows that a significant number of women not only watch sport on TV but also actively exercise. This fact seems to be still ignored by those responsible for sports coverage. As Kane and Fink point out, sport reaches its recipients mainly in mediated form (Fink, 2015, Kane, 2013). The way of communication has fundamental impact on how women's sport is received by the audience. Therefore, people in charge of sport coverage have active impact on the opinions of the audience.

In the last two decades, a lot of research has been done to demonstrate whether the traditional method of portraying women's sport (described in the previous subchapter) is desired and accepted by the audience. The research proved that both boys (Daniels & Warena, 2011) as well as girls and grown-up women (Daniels, 2012), have much worse opinions about sportswomen described or presented in sexualised postures. Descrip-

tions of abilities and achievements resulted in more positive opinions, rather than focusing on their physical appearance. Similarly, the research done by Knight and Guliano showed that focusing on physicality of sport contestants rather than on their achievements significantly lowers opinions about them in the eyes of research respondents (Knight & Guliano, 2001). The presented research shows substantial influence of the media on shaping opinions of the audience. Research participants were exposed to specific stimuli (fictitious articles or photos) for a short time, and still, their opinions about the sportsmen were explicitly influenced. Interesting research was also done by Angelini (Angelini, 2008). Respondents were to watch sport events. Afterwards, they were to note down their level of excitement. It was noted down as higher when watching men's sport. Physiological tests performed simultaneously for the level of excitement when watching sports did not demonstrate differences when watching women's or men's sport. That being so, it may be assumed that cultural factors are responsible for the fact why the respondents noted down a higher level of excitement when watching men's sport.

Research challenging the belief that women's sport can be "sold" most easily by presenting physically attractive sportswomen can also be found. It was traditionally assumed that men's sport should be advertised by means of their achievements in sport and in the case of women, by means of sexualised presentations. In the case of two experiments where the materials promoting a tennis and softball tournament manipulated with the attractiveness and abilities of female contestants, it turned out that the materials stressing achievements and abilities resulted in greater intentions to participate in the events (Fink, Cunningham & Kensicki 2004, Cunningham, Fink & Kenix 2008). Subsequent research which made use of focus group interviews with male and female sport fans also showed that the marketing strategy in women's sport used so far brought effects which were rather opposite of what was expected. In the research by Kane and Maxwell, fans between the age of 18 and 54 were shown six types of photos of sportswomen classified from those representing "athletic competences" to "soft porn" (Kane & Maxwell, 2011). The results showed that women and older men pointed to the photos presenting sport abilities as those which increased their willingness to participate in sport events most. In addition, they felt offended by the "soft porn"-style presentations. Younger men had positive opinions about the sexualised images of women, however they claimed that such images did not increase the chances of their participation in women's competitions. Similar research was conducted by Antil, Burton and Robinson. The obtained results show that particularly women react badly to marketing strategies which make use of sexualised images of female contestants (Antil, Burton & Robinson, 2012). Based on the presented research results, it seems highly probable that women's sport is at a loss regarding the attempt to attract an audience based on the conviction that physical attractiveness is the most essential aspect in women's sport.

## Sports journalism and audience demand

Apart from the mentioned-above patriarchal structure of societies and sexism resulting therefrom and the belief that sport is a male thing, also the practices employed in sport journalism marginalise women's sport in media coverage.

The research concerning sport journalism revealed its gender-oriented nature. The majority of journalists are men, and sport journalism is seen as a traditionally male area (Boyle & Haynes, 2009, p. 134). The majority of the male audience for sport coverage makes the producers of sport programmes and authors of press articles think that their coverage from sport arenas meets the needs of the audience (Hardin, 2005). A small number of female sport journalists reinforces the belief that sport is a male thing. *The International Sports Press Survey* in the part devoted to Poland shows that female journalists account for 8% of all journalists (Jakubowska, 2013, 2015). The consequence of such a state of affairs is that there is no one in the media to remind us of the issues specific to women, showing their experience and perspective. It is essential because, as the research by Kian and Hardin showed, the sex of the journalist influences the way women's sport is portrayed (Kian & Hardin, 2009). Men more frequently consolidate gender stereotypes when describing sportswomen. They also less frequently write about women's sport compared to women. Although not all research shows that employing more female journalists would increase coverage of women's sport, this fact should not be linked with the reluctance of female journalists to women's sport but with their fear of being accused of "favouring" sportswomen and the unwillingness of publishers to present women's sport (Hardin & Shain, 2005, Kian, 2007). The research by Gee and Leberman showed that the coverage of women's sport has to meet higher criteria compared to men's sport in order to be approved (Gee & Leberman, 2011). Rare research concerning female sport journalists shows that they are still marginalised at work. They earn less, it is assumed that they know less about sport than their male colleagues and their articles have to meet higher standards (Miller & Miller, 1995, Kian, 2007). In addition, they experience various forms of abuse both at work (due to the fact of masculinisation of sport sections in the media) and from coaches, contestants and activists (Miller & Miller, 1995, Miloch et al., 2005). As Hardin and Shain noticed, in their professional life, they have to constantly negotiate between femininity and a culturally-established attitude of a professional journalist (Hardin & Shain, 2006). They fall into the pattern of double bind. In order to be accepted, they have to be feminine: empathic, understanding, kind, etc. and at the same time, they have to negate such features in order to be treated as professionals at work.

The research concerning media publishers from the Southeast in the USA brought very interesting results (Hardin, 2005). Such research is very important because the choices made by publishers in terms of texts

to be published, shape the preferences of readers. A survey conducted among 285 publishers showed that, frequently, they do not verify the preferences of readers (only 55% check the demographic data concerning the readers, and 40% make use of some method of surveying interests of readers). Publishers also rely on their personal beliefs concerning inferiority of women's sport and that an average male reader is not interested in following women's sport. That being so, the views of publishers shaped by the prevailing patriarchal cultural beliefs would be a major factor in marginalising women's sport in the media. As the author of the research concludes, it is also disturbing that a large portion of publishers have opinions about women's sport which justify its exclusion from media coverage. Thus, they do not feel that they create reluctance or invisibility of women's sport in the public space. They do not think that their task is to provide fair coverage for both sexes and, at the same time, do not notice that by keeping the status quo, they also make certain socially-significant decisions. Kane points out that narration: "nobody's interested in women's sport" – ignores the growing interest in women's sport both in terms of direct participation and via the media. The narration shared by journalists may no longer have anything to do with social reality, but with the beliefs of publishers, journalists and producers themselves (Kane, 2013, p. 233).

## Methodological assumptions

The main purpose of the study was to perform a quantitative and qualitative comparison of the press materials from the last Olympics in Rio de Janeiro.

brief] was not analysed because it presented only the results. Also, the analysis did not cover the articles about sport which were not directly related to competing in sports, such as e.g. concerning the construction of sports stadiums, economic potential of sport, etc. These articles are described as neutral. Mixed articles made up a separate category, i.e. such which described both events in men's and women's sports.

A code sheet was developed to code the results of the analysis. The articles were coded due to their length (number of words was decisive), journalist's sex (if it was signed) and sports discipline. The other part of the tool for the qualitative analysis distinguished five coding categories: appearance and sexuality of athletes (emphasizing the beauty, clothes, etc.), referring to out-of-sport roles and tasks (of a mother, daughter, wife), language and comments (infantilising – limiting competitors to the role of teenagers and children, sarcastic, but also using martial metaphors). Another coding category described the skills of the contestants (describing physical and mental properties which were decisive for the victory or lack of it in case of failure). Every text was analysed twice and coded by both authors.

## Results of quantitative analysis

85 articles in "Gazeta Wyborcza" and 112 in "Fakt" were analysed. Respectively, 24 and 36 articles were written about women's sport. This data shows that the press coverage on the Rio Olympics was disproportionate since the females accounted for 42% of the representation and received only 28% of space in GW and 32% in Fakt (Fig. 1).

	Gazeta Wyborcza	Fakt
Number of articles	85	112
Number of articles about women (% of all articles)	24 (28)	36 (32)

**Fig. 1.** Number of articles about women's sport

The research method used was content analysis. "Gazeta Wyborcza" (GW) and "Fakt Gazeta Codzienna" were chosen for analysis. The daily circulation of Gazeta Wyborcza (GW) in May 2018 was 93,136 copies, according to the data of Związek Kontroli Dystrybucji Prasy, 2018 [the Association of Press Distribution Control] (.). "Gazeta Wyborcza" has the opinion of a liberal paper which promotes the values of social equality and justice. The other paper selected for analysis is "Fakt Gazeta Codzienna". It is a tabloid paper with the highest circulation among daily newspapers in the country (248,993 copies).

In the study, all sports articles published from the day of starting the Olympic Games to the day after completing were analysed. The column "w skrócie" [in

It is even more puzzling in the context where Polish female athletes won eight medals compared to three won by men. In addition, during the Olympics, "Fakt" published over three times as many sport articles (118) not related to the Rio Olympics. Mostly, these were articles concerning the Polish highest football league – Ekstraklasa, and related results. Taking account of the fact that the Polish league is not among the best in Europe, such coverage in the press may be surprising. It is known, however, that football is still the most popular sport discipline in Poland and a kind of a "bastion of masculinity".

Articles in "Gazeta Wyborcza" were significantly longer compared to "Fakt", which to some extent, may compensate for their smaller number (Fig. 2).

Number of words (%)	Gazeta Wyborcza		Fakt	
	Women	Men	Women	Men
over 550	16 (66)	50 (82)	0	0
from 200 to 550	4 (17)	7 (11)	5 (14)	16 (21)
less than 200	4 (17)	4 (7)	31 (86)	60 (79)

**Fig. 2.** Analysed articles by length

	Gazeta Wyborcza		Fakt	
	Women (% of all articles)	Men (% of all articles)	Women (% of all articles)	Men (% of all articles)
Disciplines	LA (25) Canoeing/rowing (13) Tennis/wrestling/mountain biking (8)	LA (18) Cycling/swimming (8) Weightlifting (7)	Athletics (30) Rowing (17) Tennis (11)	Athletics (24) Handball (17) Volleyball (14)

**Fig. 3.** Most frequently described disciplines in women's and men's sport

Articles in "Fakt" provided rough reports from sport events, however, definitely more photos were attached. Articles in GW were more complex, with plenty of descriptions of not only the course of the competition, but also preparations and analyses after the show. In GW, the number of long articles (more than 550 words) about men's sport was higher, the number of shortest articles (less than 200 words) was also definitely smaller compared to the articles about women's sport. In "Fakt", medium-length articles about men's sport could be found more often (21% of all articles) and fewer short articles (79%), with adequately 14% and 86% of materials about women's sport.

None of the articles about the Olympic Games were written by a female journalist. In the two largest daily papers in Poland, only men write about sport, which does not facilitate equal engagement in reporting sport events concerning women and men.

As to the question about the disciplines described in the newspapers, this can be answered only partially. Due to the fact that mainly occurrences of Poles were reported during the Rio Olympics, a lot was written about athletics (gold medal and world record by Anita Włodarczyk) as well as canoeing and rowing. A small number of articles about non-Poles was focused on disciplines appropriate for each sex. Women's basketball, handball or football tournaments were not reported either, but space was devoted to individual feminine-deemed disciplines. The information about men's sport was also related to the disciplines considered masculine or neutral (weightlifting, handball, athletics) (Fig. 3).

## Results of qualitative analysis

In the articles about women's sport, numerous allusions to the physical appearance of sportswomen can be found. Contrary to the descriptions of physicality of men, such descriptions are not connected with chances to succeed in a given sport discipline. Descriptions of women's physicality are assessment of their attractiveness for the opposite sex.

"A beautiful Polish woman is a revelation of the javelin throw" (Marysiu! Zrób to jeszcze raz [Marysia! Do it again], 18<sup>th</sup> Aug. 2016, Fakt)

"They are beautiful and play beach volleyball very well. Brazilian men, who adore beautiful women and beach volleyball, don't need more" (Rio szaleje za Polkami [Rio is crazy about female-Poles], 9<sup>th</sup> Aug. 2016, Fakt)

"Marta likes pink. Marta likes distinctive colours, neon nails. Marta is laid-back and publishes bold photos of herself on Facebook" / "She does not part with her old pink canoe, does not quit her neon nails, she loves the stars tattooed on her neck and back – a strong-delicate woman, Marta Wälczykiewicz, Olympic vice-champion" (Medalowa mieszanka wybuchowa [A ujednolicono kolejnosc zapisu, GW).

The last quotation demonstrates the ambivalent message concerning female contestants well. On the one hand, their physical strength needed to succeed in sport

is emphasized, on the other, such comments are neutralised by judgements about their physical attractiveness. Such a manner of narration may be an attempt to “cram” sportswomen into conventional femininity from which their athleticism might ‘exclude’ them.

Descriptions of male physicality much more often refer to translating their physical conditions into their capabilities within a given discipline. Their athleticism and muscle mass are emphasized.

“The USA team have it all to challenge everyone. Tall, aggressively attacking forwards led by Matthew Anderson, well-known from the Master League, who likes to torture Polish teams. (...) Versatile and athletically-perfect players play a very well-organised volleyball” (Polacy na podbój Ameryki [Poles to conquer America], 17<sup>th</sup> Aug. 2016, GW).

“This team commands respect even when singing the anthem, with a line of giants holding hands on each other’s shoulders, all of almost the same height. As to physical conditions, their advantage over Poles was huge”. (Koszmar zwyciężonych [Nightmare of the defeated], 22<sup>nd</sup> Aug. 2016, GW)

Both, female and male contestants were portrayed in their out-of-sport roles. With men, the role of the father was emphasized (T. Majewski, M. Phelps). The status of a lady-killer, skirt-chaser or a partygoer was also stressed (R. Lochte, M. Phelps). This strategy is aimed at stressing masculinity of sportsmen reproduced by means of their sexual performance. With women, relationships with their husbands were stressed (K. Hosszu).

“Larissa is better known – four years ago she won an Olympic medal and three years ago got married ...to another beach volleyball player, Liliane Maestrini” (Zagrają w kotle [To play in the cauldron], 11<sup>th</sup> Aug. 2016, Fakt).

“Then, her friend gave birth to a child. And Magda married Michał Kozłowski, who is her coach” (Mamy złoto [We’ve got the gold], 12<sup>th</sup> Aug. 2016, Fakt)

Significant differences can be found in the commentaries and language used to address female and male contestants. Especially in “Fakt”, females were frequently addressed directly, by their name and using diminutive forms. This can be seen even in the titles of articles: “Anita, you are grand!” (16<sup>th</sup> Aug. 2016), “Marysia, do again” (18<sup>th</sup> Aug. 2016) or “Zosia did not samba” (19<sup>th</sup> Aug. 2016). However, also in GW, females were frequently described using only their first names: “Katinka, who enraptures and shocks, is on a winning streak” (11<sup>th</sup> Aug. 2016, GW), “May the power be with Maja” (20<sup>th</sup> Aug. 2016, GW). Additionally, in “Fakt”, female contestants were described as: “our ladies” (“Magda i Natalia pokazały siłę” [Magda and Natalia showed strength], 8<sup>th</sup> Aug. 2016, Fakt). No doubt, Polish female athletes were considered “closer” or more “ours”, which could result in more intimacy and such a way of presentation. It can be hard, how-

ever, to treat it as a sign of respect or a mature attitude towards sportswomen.

What is also noticeable is comparison of the achievements of female and male contestants. Sportsmen are seen as examples and sportswomen only as their counterparts, which may cause their further trivialisation. In the articles, it was stressed that S. Biles is a star like M. Phelps (“Nadleciała S. Biles” [Here comes S. Biles], 12<sup>th</sup> Aug. 2016, GW) and Polish female canoers are as strong as men (“Medalowa mieszanka wybuchowa” [Medal explosive mixture], 17<sup>th</sup> Aug. 2016, GW).

Martial metaphors would occur more frequently in texts about men’s sport, but exceptionally good results of female contestants were also described with the use of such metaphors. Martial metaphors stress valour and strength of male contestants and give the reader the impression that sport is something much more important than entertainment. They occur in articles about men’s sport more often because they describe disciplines stereotypically linked with masculinity, that is, mainly collision and contact sports.

“A commando platoon well-coordinated in training has contact via radio with the headquarters in the car”. (Cztery pancerni w Rio de Janeiro [Cztery pancerni – the four tankers – in Rio de Janeiro], 6<sup>th</sup> Aug. 2016, GW)

“The Argentinian “La Nacion” wrote about a tennis match in Rio that del Porto used his right hand as if with each strike he bombed Vietcong and ISIL at the same time”. (Jak Juan Martin del Potro zbombardował Wietkong [How Juan Martin del Potro bombarded Wietkong], 9<sup>th</sup> Aug. 2016, GW)

Sportsmen were also compared to gangsters (U. Bolt), musketeers or even gods (M. Phelps). Dominance of women was noticed, especially in the case of Anita Włodarczyk, however, descriptions were not as colourful and evocative as in the case of men’s sport.

Apart from one example, in the analysed material, no statements were found which would explicitly ridicule or humiliate female contestants. In numerous cases, their sport skills were appreciated. Their class (Maja Włoszczowska), dominance (Anita Włodarczyk) and strength (canoers, rowers) were noted. However, when describing men’s sport, colourful descriptions of their competitions, spiced up with positive adjectives, were created. Their dedication and determination were praised, struggles with sport injuries and status of unquestionable stars worldwide were described.

“And it is Bolt who will stay in our minds as an imprinted photo at the moment of his celebration after winning – his right elbow bent, drawing back the bowstring to send an arrow into the skies. Or lightning like an ancient god” (Największy wszechczasów [The greatest of all time], 16<sup>th</sup> Aug. 2016, GW).

The Olympics which were unsuccessful for the Polish woman fencer, made a “Fakt” journalist ridicule Aleksandra Socha.

“After four Olympics, with our money, Aleksandra Socha came to a conclusion that she is not fit for fencing because she is sorry when her rival loses” (Machanie szabelką zamiast szermierki [Waving a mini-saber instead if fencing], 12<sup>th</sup> Aug. 2016, Fakt).

It was the only article with a demeaning comment. Otherwise, women’s sport was often described in a less exciting manner, their achievements were neutralised with references to traditional femininity, however, legitimacy of their participation was not undermined.

## Conclusions

The results of the content analysis of media coverage are to a significant extent, consistent with the previous studies (Cooky et al. 2015, 2013, Fink, 2015, Jakubowska, 2015, Kane, 2013). The analysed material points not only to underrepresentation of women’s sport in the two largest Polish dailies, but also to a different manner of describing sport depending on sex (Eagleman, 2015, Fink 2015, Fink & Kensicki 2002). Taking the higher number of medals won by Polish female athletes compared to men into account, underrepresentation of articles about women’s sport may be surprising, even more when we compare it with the number of articles about sport events not related to the Olympics. Success of Polish female athletes did not receive as much coverage as football league matches. In addition, in the analysed material, no articles appeared which would analyse achievements of Polish female athletes, their status in sport or barriers they face even to be able to present their efforts in the media. It seems that the opinion of Mary Jo Kane quoted at the beginning, also fits perfectly in the case of Polish female athletes (Kane 2013). Despite increasingly better results in sport, sportswomen cannot count on fair media coverage. Lack of female sport journalists and understanding of the problems of sportswomen result from the conviction about the “masculine” structure of sport (Jakubowska, 2015, Hardin, 2005, Kian, 2007). The status of women as ‘the others’ in sport can still be seen, even in the manner they are portrayed. A tendency can be observed to describe them in the categories of classic femininity, which neutralises their sport achievements.

## References:

- Angelini, J. R. (2008). Television sport and athlete sex: Looking at the differences in watching male and female athletes, *Journal of Broadcasting and Electronic Media*, 52, pp. 16-32.
- Angelini, J. R., Billings, A.C. (2010). An agenda that sets the frames: gender, language, and Nbc’s Americanized Olympic telecast, *Journal of Language and Social Psychology*. 29, 363–385.
- Angelini, J.R., MacArthur, P.J., & Billings, A.C. (2012). What’s the gendered story? Vancouver’s prime time Olympic glory on NBC, *Journal of Broadcasting & Electronic Media*, 56, 261–279.
- Antil, J.H., Burton, R., & Robinson, M.J. (2012). Exploring the challenges facing female athletes as endorsers, *Journal of brand strategy*, 1, 292-307.
- Bares, F. (2016). Nasze złote i brązowe dziewczyny już w Polsce, *Gazeta krakowska*, <http://www.gazetakrakowska.pl/sport/a/nasze-zlote-i-brazowe-dziewczyny-juz-w-polsce-zdjecia,10525424/>
- Bernstein, A. (2002). “Is it time for a victory lap? Changes in the media coverage of women in sport, *International Review for the Sociology of Sport*, 37, 415 428.
- Billings, A.C., & Eastman S.T. (2002). Gender, ethnicity, and nationality: Formation of identity in NBC’s 2000 Olympic coverage, *International Review for the Sociology of Sport*, 37, 349–368.
- Billings, A.C., & Eastman S.T. (2003). Framing identities: Gender, ethnic, and national parity in network announcing of the 2002 Winter Olympics, *Journal of Communication*, 53, 369–386.
- Billings, A.C. (2007) From diving boards to pole vaults: Gendered athlete portrayals in the “big four” sports at the 2004 Athens Summer Olympics, *Southern Communication Journal*, 72, 329-344.
- Billings, A.C. (2008b). *Olympic media. Inside the biggest show on television*, London: Routledge.
- Billings, A.C., Brown, Ch.L., Crout, J.H. III, McKenna, K., Rice B., Timanus, M., Ziegler, J. (2008a). The games through the NBC lens: Gender, ethnic, and national equity in the 2006 Torino Winter Olympics, *Journal of Broadcasting & Electronic Media*, 52, 215–230.
- Billings A.C., Young, B.D. (2015). Comparing flagship news programs women’s sport coverage in ESPN’s *Sports Center* and FOX Sports 1’s FOX Sports Live, *Electronic News*, 9, 2-16.
- Bissell, K., & Duke, A. (2007). Bump, Set, Spike: An analysis of commentary and camera angles of women’s beach volleyball during the 2004 Summer Olympics, *Journal of Promotion Management*, 13, 35-53.
- Boyle, R., & Haynes, R. (2009). *Power Play Sport, the Media and Popular Culture*. Edinburgh: Edinburgh University Press.
- Capranica, L., Minganti, C., Billat, V., Hanghoj, S., Piacentini, M.F., & Cumps, E., (2005). Newspaper coverage of women’s sport during the 2000 Sydney Olympic Games: Belgium, Denmark, France and Italy, *Research Quarterly for Exercise and Sport*, 76, 212–223.
- Clark, J., Apostolopoulou, A., & Gladden, J. (2009). Real women watch football: Gender differences in the consumption of the NFL Super Bowl Broadcast, *Journal of Promotion Management*, 15, 165-183.
- Connell, R. (1998). *Gender and Power, Society, the Person and Sexual Politics*. Cambridge: Polity Press.
- Cooky, Ch., Messner, M.A., & Hextrum, R.A., (2013). Women play sport, but not on TV: A longitudinal study of televised news media, *Communication & Sport*, 1, 1-28.
- Cooky, Ch., Messner, M.A., & Musto M. (2015). “It’s dude time!”: A quarter century of excluding women’s sports in televised news and highlights shows, *Communication & Sport*, 3, 261-287.

- Cunningham, G.B., Fink, J.S., & Kenix, L.J. (2008). Choosing an endorser for a women's sporting event. The interaction of attractiveness and expertise, *Sex Roles*, 58, 371-378.
- Daddario, G. (1992). Swimming against the tide: *Sports Illustrated* imagery of female athletes. *Women's Studies in Communication*, 15, 49-64.
- Daddario, G. (1994). Chilly scenes of the 1992 Winter Games: The mass media and the marginalization of female athletes. *Sociology of Sport Journal*, 11, 275-288.
- Daniels, E. A. (2012). Sexy versus strong: What girls and women think of female athletes. *Journal of Applied Developmental Psychology*, 33, 79-90.
- Daniels, E. A., & Wartena, H. (2011). Athlete or sex symbol: What boys think of media representations of female athletes. *Sex Roles*, 65, 566-579.
- Ducan, M., Messner, M., Williams, L., Jensen, K., & Wilson W. (1994). Gender stereotyping in televised sports. *Women, sport and culture*, Birrell S., Cole Ch. (eds.), Champaign: Human Kinetics, pp. 249-272.
- Dworkin S., & Messner M., (2002). Just do what? Sport, bodies, gender. *Sport and gender. A reader*, Scraton S., Flintoff A. (eds.), Routledge, New York, pp. 17-29.
- Dziubiński, Z., Organista, N., & Mazur, Z. (2015). O konstruowaniu męskości i kobiecości na podstawie przekazów prasowych w Gazecie Wyborczej dotyczących Mistrzostw Świata w piłce nożnej w 2010 i 2014 roku, *Studia Medioznawcze*, 62, 105-116.
- Dziubiński Z., Natalia O., & Mazur Z. (2018), Still marginalised: Gender inequalities in the largest Polish daily's sports coverage, *Communications: European Journal of Communication Studies*, DOI: <https://doi.org/10.1515/com-2017-0047>.
- Eagleman, A. (2015). Constructing gender differences: newspaper portrayals of male and female gymnasts at the 2012 Olympic Games, *Sport in society: Cultures, Commerce, Media, Politics*, 18, 234-247.
- Fink, J.S., & Kensicki, L.J. (2002). An imperceptible difference: Visual and textual constructions of femininity in *Sports Illustrated* and *Sports Illustrated for Women*, *Mass Communication and Society*, 5, 317-339.
- Fink, J. S., Cunningham, G. B., & Kensicki, L. J. (2004). Using athletes as endorsers to sell women's sport: Attractiveness versus expertise, *Journal of sport management*, 18, 350-367.
- Fink, J.S. (2015). Female athletes, women's sport, and the sport media commercial complex: Have we really „come a long way baby“?, *Sport management review*, 18, 331-342.
- Gee, B., & Leberman, S. (2011). Sports media decision making in France: How they choose what to get to see and read, *International journal of sport communication*, 4, 321-343.
- Greer, J.D., Hardin, M., & Homan, C. (2009). "Naturally" less exciting? Visual production of men's and women's track and field coverage during the 2004 Olympics, *Journal of Broadcasting & Electronic Media*, 53, 173-189.
- GUS, (2013). *Uczestnictwo Polaków w sporcie i rekreacji ruchowej w 2012r.*, Warszawa.
- Hardin, M. (2005). Stopped at the gate: Women's sport, „reader interest,” and decision making by editors, *Journalism & Mass Communication Quarterly*, 82, 62-77.
- Hardin M., & Shain, S. (2005). Female sport journalist: Are we there yet? 'No.'. *Newspaper research journal*, 26, 22-35.
- Hardin, M., & Shain, S. (2006). "Feeling Much Smaller than You Know You Are": The Fragmented Professional Identity of Female Sports Journalists, *Critical Studies in Media Communication*, 23, 322-338.
- Hendenborg, S. (2013). The Olympic Games in London 2012 from Swedish media perspective. *The international journal of the history of sport*, 30, 789-804.
- IBRIS, (2014). *Badanie widzów audycji sportowych*, Retrieved from: <http://www.slideshare.net/InstytutHomoHomini/badanie-widzw-audycji-sportowych>,
- International Olympic Committee, (2016). *Factsheet. Women in the Olympic movement*. Retrieved from [https://stillmed.olympic.org/Documents/Reference\\_documents\\_Factsheets/Women\\_in\\_Olympic\\_Movement.pdf](https://stillmed.olympic.org/Documents/Reference_documents_Factsheets/Women_in_Olympic_Movement.pdf)
- Jakubowska, H. (2013a). Świat sportu w gazetach codziennych na podstawie wyników „The International Sports Press Survey 2011”, *Studia Medioznawcze*, 52, 47-62.
- Jakubowska, H. (2015). Are Women Still the 'Other Sex': Gender and Sport in the Polish Mass Media., *Sport in Society: Cultures, Commerce, Media*, 18, 168-185.
- Jakubowska, H. (2014). *Gra ciałem. Praktyki i dyskursy różnicowania płci w sporcie*. Warszawa: Wydawnictwo Naukowe PWN.
- Jones, K. (2008). Female fandom: Identity, sexism, and men's professional football in England, *Sociology of Sport Journal*, 25, 516-537.
- Jones, A. (2011). *Visual and verbal gender clues in the televised coverage of the 2010 Winter Olympic*, *The international journal of interdisciplinary social sciences*, 6, 199-216.
- Kane, M.J. (1996). Media coverage of the post Title IX female athlete, *Duke Journal of Gender Law and Policy*, 3, 95-127.
- Kane, M.J., & Maxwell, H.D. (2011). Expanding the boundaries of sport media research: using critical theory to explore consumer responses of representations of women's sport, *Journal of sport management*, 25, 202-216.
- Kane, M.J. (2013). The better sportswomen get, the more the media ignore them, *Communication & Sport*, 1(3), 231-236.
- Kian, M.E. (2007). Gender in sports writing by the print media: an explanatory examination of writers' experiences and attitudes, *The SMART journal*, 4, 5-26.
- Kian, M. E., & Hardin M. (2009). Framing of Sport Coverage Based on the Sex of Sports Writers: Female Journalists Counter the Traditional Gendering of Media Coverage, *International Journal of Sport Communication*, 2, 185-204.
- King, Ch. (2007). Media portrayals of male and female athletes, *International Review For the Sociology of Sport Journal*, 42, 187-199.
- Kinnick, N.K. (1998). Gender bias in newspaper profiles of 1996 Olympic athletes: a content analysis of five major dailies, *Women's Studies in Communication*. 21, 212-237,
- Kluczyńska, U. (2011). Konstruowanie relacji między rodzajami w sporcie. Analiza telewizyjnych wiadomości sportowych. *Kalejdoskop genderowy. W drodze do poznania płci społeczno-kulturowej w Polsce*, Słany K., Kowalska B., Ślusarczyk M. (eds.), Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego, pp. 383-397.



- Knight, J. L., & Giuliano, T. A. (2001). He's a "laker"; she's a "looker": The consequences of gender-stereotypical portrayals of male and female athletes by the print media. *Sex Roles*, 45, 217-229.
- Koivula, N., (2001). Perceived characteristics of sports categorized as gender-neutral, feminine and masculine. *Journal of sport behavior*, 24, 377-393.
- Meier H., Strauss B., & Riedl D. (2015). Feminization of sport audiences and fans? Evidence from German men's national soccer team, *International review for the sociology of sport*, DOI: 10.1177/1012690215612457
- Messner, M.A. (1998). Sport and men domination: The female athlete as contested ideological terrain, *Sociology of Sport Journal*, 5, 197-211.
- Miller, P., & Miller, R. (1995). The invisible women: Female sport journalist in the workplace. *Journal of mass communication quarterly*, 72, 883-889.
- Miloch, K.S., Pedersen, P.M., Smucker, M.K., & Whisehant, W.A. (2005). The Current State of Women Print Journalists: An Analysis of the Status and Careers of Females in Newspapers Sports Departments. *Public organization review: A global journal*, 5, 219-232.
- Nowakowska, L. (2016). Babskim okiem: Panowie czapki z głów, *Katowicki sport*, <http://katowickisport.pl/felietony-i-komentarze/lidia-nowakowa,peony-szacun-dla-pan-polski-sport-kobietami-stoi-,artykul,714274,1,12696.html>
- O'Neill, D., & Mulready, M. (2014). The Invisible Woman?, A comparative study of women's sports coverage in the UK national press before and after the 2012 Olympic Games, *Journalism practice*, 9 (5), 651-668.
- Pfister, G., Lenneis, V., & Mintert, S. (2013). Female fans of men's football – a case study in Denmark, *Soccer and Society*, 14(6), 850-871.
- Prinen, R. (1997). The construction of women's positions in sport: A textual analysis of articles on female athletes in Finnish Women's Magazines, *Sociology of Sport Journal*, 14, 290-301.
- Sabo, D., & Jensen, S. (2002). Prometheus Unbound: Constructions of masculinity in sports media. *MediaSport*, Wenner L. (eds.), London, New York: Routledge, 202-220.
- Zimoch, T. [2016] „Polski sport kobietami stoi”, ZET-knięcia z Rio. Olimpijski magazyn Tomasza Zimocha [VLOG], <http://www.radiozet.pl/Radio/Programy/ZETkniecia-z-Rio.-Olimpijski-magazyn-Tomasza-Zimocha/Olimpijski-magazyn-Tomasza-Zimocha-w-Radiu-ZET-00026243>
- Turner, J.S. (2014). A longitudinal content analysis of gender and ethnicity portrayals on ESPN's *SportsCenter* from 1999-2009, *Communication & Sport*, 4, 303-327.
- Wensing, E., & Bruce, T. (2003). Bending the rules. Media representations of gender during an International Sporting Events, *International Review for the sociology of sport*, 38, 387-396.
- Vincent, J., Imwold, Ch., Masemann, V., & Johnson, J. (2002). A comparison of selected serious and popular British, Canadian and United States newspaper coverage of female and male athletes competing in the Centennial Olympic Games. *International Review for the Sociology of Sport*, 37, 319-335.
- Vincent, J. (2004). Game, Sex, and Match: The Construction of Gender in British Newspaper Coverage of the 2000 Wimbledon Championships, *Sociology of Sport Journal*, 21, 435-456.
- Związek Kontroli i Dystrybucji Prasy, (2018). *Dzienniki opublikowane dane 2018.05*. [Retrieved from] <https://www.teleoskop.org.pl/zkdp/index.jsp?p=publicDataNoReg>

# Economic cooperation between public and private sectors – a comparative analysis of the Olympic Games in Athens 2004 and London 2012

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## Summary

The Olympic Games are considered to be the most important sports event in the world. In spite of the sports' dimension of the Olympics, there are many other aspects which should be taken into consideration when thinking about the Olympics. These refer to economic, political, organisational and social fields. An appropriate budget, organisational structure, sports and non-sports infrastructure are just a few of the necessary issues. The major aim of this article is to present the spectrum of cooperation between the public and private sector during the Athens 2004 and London 2012 Olympic Games, the economic effectiveness of the Olympics in both cities and the realisation of the Olympic Legacy focused on post-Games infrastructure and other facilities and areas of a socio-economic reality. The results of this study reveal that only a host city where an appropriate organisational structure, net of stakeholders, budget and strategy for Olympic infrastructure are established, is capable of drawing potential benefits from The Olympic Legacy.

**Keywords:** The Olympic Games, professional sports, sports industry, sports economics, sports management, public-private partnership

## Introduction

The Olympic Games are the most important sports competition for athletes in the world. For two weeks, the world's attention is focused on rivalry between the best athletes. Live spectators or TV viewers support their representatives whole-heartedly.

Over the last several years, to the ancient Olympic rule *citius, altius, fortius* (faster, higher, stronger), a fourth term – *carius* has been added, meaning – more expensive [Olszański 1995/1996, p. 144]. The Olympic Games are not just a sports rivalry. It is also a huge venture in many areas of the present economy. In order to organise the Olympic Games, the host city needs to incur significant financial outlays to complete all necessary investments dedicated to the event. The tendency of growing costs is unequivocal. Hence, many experts and specialists in sports economics debate this problem and research whether being the Olympic host city positively affects socio-economic development and improvement of well-being.

The main premise of the subject is a broadening discussion on cost-effectiveness of staging the Olympics. The Olympic event may become a huge opportunity for the host city development, especially in urban and sports

infrastructure and residents welfare. The main thesis of this paper is that suitable and proper cooperation between public and private sectors contributes to the better organisation process and usefulness of post-Olympic infrastructure in the future.

The major aim of this paper is a comparative analysis of organisational structure, expenditures on the Olympic Games in Athens 2004 and London 2012, as well as the economic effectiveness of the Athens and London Games organisation. Moreover, it was presented to what extent both host cities secured the benefits from staging the Olympics, which are specified as Olympic Legacy. It is reasonable to consider if the Olympic Games should be evaluated only through the prism of economic effectiveness or whether it is a sports event which carries many benefits for society and raises the prestige and renown of a host city.

Research methods used in this paper refer to monographs and reports written and published by Olympic Organization Committees, government agendas as well as international and academic institutions. Moreover, the method of effectiveness ratios has been used to examine the financial burden for public and private budgets and comparative analysis of both Olympic host cities' economic effectiveness.

## The Olympic Games as an example of cooperation between public and private sectors

The Olympic event is preceded by years of preparations in the area of infrastructure and other organisational aspects, including construction of Olympic venues, transportation, communication, the Olympic Village and many more. Statistics relating to the Olympic Games from Barcelona 1992 to London 2012 prove how great and on what a large scale the Olympic event is held. Throughout the years, the number of athletes and competitions has been continuously increasing, thus acknowledging the Games' importance and prestige as a paramount, worldwide sports event. For example, the number of nations participating in the Olympic event in Barcelona was 169. In London 2012, this number increased to 204. The number of athletes raised from 9,356 in Barcelona to 10,568 in London 2012 [London East Research Institute of the University of East London 2007, p. 20-21 and IOC 2013].

The Olympic Games are a global event, gathering the biggest interest of media, sponsors, and first and foremost, sporting fans and spectators all over the world, independently of inhabited latitude. In English literature, this kind of global sports competitions is defined as a "*mega event*" [Matheson 2006, p. 2]. In order to organise such an event, hosts must allocate several millions of dollars. In the history of Olympic budgets, expenditures may oscillate around 50 billion dollars – as in the case of the 2014 Winter Olympic Games in Sochi. Although the organisation of global sports event is a huge financial venture for the host city, there are still candidates eager to hold these kind of events.

Over the decades, several Olympic management models have been noticed and classified. It is especially important while considering the range of competences and obligations on public and private sector institutions. According to [Poynter 2009b, p. 15-16], governance may be varied according to three categories:

- State centred – where central government provides the policy framework and the role of non-state institutions is mainly restricted to (part) financing and delivery of the project (e.g. Montreal, Athens and Beijing);
- Public/private partnership – where the economic or commercial interests of the latter are privileged in the process of the project development (e.g. Atlanta);
- Networks of stakeholders – where the interests of all stakeholders (the state, private sector, local communities and civic groups) are represented in the governance framework and the vision and policy goals of the project (e.g. Barcelona, Sydney, London).

Business practice has formed models of cooperation between public and private sectors. In context of this issue, it is noteworthy to quote the definition of public-private partnership (next PPP) as an example of intersectoral collaboration.

The term partnership is mostly described "as an agreement between two or more partners who cooperate together in order to achieve a joint aim". There is not one, generally valid definition specifying the PPP mechanism. [Korbus and Strawiński 2009, p. 23] define PPP as: "a form (instrument) of efficient public service delivery, provided by administration (or rather authority served by this administration) in cooperation with the private partner. Construction or modernisation of infrastructure itself is entirely the consequence or condition for public tasks to be effectively executed by local authorities or municipalities". On the basis of the above definition, it can be concluded that the PPP's primary aim is the mutual execution of obligations performing by the partners within a scope of the project implementation. There is no "one-sector" responsibility for succeeding in the project [Korbus and Strawiński 2009, s. 23]. [Rytel 2009, p. 5] underlines the duration of partnership: "public-private partnership is a long-term cooperation between public and private sectors in the pursuit of service realisation for society". PPP is a long-lasting process, which frequently lasts dozen or several dozen years. Long-term mutual cooperation shows that in the face of economic and political changes associated with parliamentary and council elections, actions within a frame of cooperation between the public and private sector need to be efficient and harmonious, independently of the politics of the state or council authorities. This is the core of a successful project in the PPP formula.

The PPP definition presented by the European Parliament highlights another hallmark of this form of cooperation [Regulation (EU) No. 1303/2013, p. 20]: "PPP means forms of cooperation between public bodies and the private sector, which aim is to improve the delivery process of investments in infrastructure projects or other types of operations, deliver public services through risk sharing, benefit from private sector know-how or additional sources of capital". The above definition brings new elements into efficient and successful investment process within the PPP model. It emphasises the significance of risk as an inherent element of investment implementation in the PPP model. Risk appears on the side of the private partner as well as public, so that risk management is very relevant in order to complete the investment.

More PPP ventures are being commonly undertaken to prepare global sporting events such as the Olympic Games and the FIFA World Cup®. It is claimed that the participation of private entities in the organisational process of these events is widely noticed, mostly in the financial dimension. The private sector contributes to the budget for sports venue construction and transportation infrastructure, the development of which is strategic to host a great sports event smoothly. For public authorities, PPP is considered to be an alternative and opportunity to decrease construction and operating costs by making an agreement with a private partner. Moreover, as a rule, a private partner is more experienced in

the field of sports arena management. Consequently, the project realisation is aimed at increasing efficiency in usefulness and finance, relieving council budgets. Public authorities do not have to provide funds solely. As a result, construction costs are not too onerous for taxpayers because if a sports object would have been financed entirely by public authorities, that situation could lead to a tax raise and debt of local government unit. An example of a city which has been facing long-term debt after the Olympic Games in 1976 is Montreal. Construction costs of particular Olympic infrastructure elements exceeded initial plans. The Olympic stadium is nicknamed the "Big O", but among the city residents, it was called the "Big Owe" because of its construction and maintenance costs [CBC News 2006]. After the Olympics, the city had 1.5 billion CAD debt which the city had to pay off for the next 30 years. A special tobacco tax needed to be imposed to repay the above mentioned sum. In the middle of November 2006, it was announced that the debt was paid off [CBC News 2006]. The budget of the Olympic Games in Montreal is claimed to have been a financial disaster.

Los Angeles was the first host city where the 1984 Olympic Games' organisation process were supported with a large share of private entities. This model of organisation initiated "an era of commercialisation" [Poynter and Roberts 2009b, p. 123]. Negative experiences in the organisation process of the Montreal Olympic Games have been one of the main reasons to involve private institutions in the 1984 Los Angeles Olympic Games' preparation process.

The 1996 Summer Olympic Games in Atlanta are an example of an event where the PPP model was used on a large scale. Atlanta established three key entities responsible for the supervision of preparation. A tripartite agreement called the Tri-Party Agreement was set up and represented by: a private sector – The Atlanta Committee for the Olympic Games (ACOG), state authorities – Olympic Authority (MAOGA) and the Host City. It practically turned out that ACOG was a leading institution [Poynter and Roberts 2009b, p. 123]. Responsibility for preparations and staging the Olympics was upon the ACOG. The private sector representatives dominated a preparation process strategy and possessed the actual decision-making power. In 1992, the non-profit organisation was appointed – Cooperation for Olympic Development in Atlanta (CODA), the main accountability of which was to manage the urban regeneration of districts adjacent to the Olympic arenas. Since the beginning of activity, collaboration in CODA has been very tough and no joint strategy has been created. Moreover, its activity has been marginalised. The aftermath of the event, The Olympic Park, has become a symbol of public and private sectors' relationship collapse and a shameful sign of private interest superiority over those public [Poynter and Roberts 2009b, p. 123]. Since then, a special rule has been adopted stating that the host city application has to provide funds from the public resources in order to

avoid the scenario that the private sector would dominate and impose its own vision of the Olympics [Poynter and Roberts 2009b, p. 123].

## Comparative analysis of budget and organisational structure in Athens 2004 and London 2012

The organisational structure presents mutual relationships and connections between various entities which are part of an institution or venture. In the case of the Olympic Games, this structure emerges what kind of public and private sector entities are responsible for preparations and hosting the Games as well as the scope of their common relationships.

The organisation and responsibility for staging the Olympics in Athens mainly relied on the public sector. Greece represented a state-centred management model executed by the Greek government [Poynter 2009c, p. 31]. Although, the public sector had the furthest decision-making power, the private sector was supposed to have participated in preparations for the upcoming event. The organisational structure of the Athens 2004 Olympic Games was dominated by public entities with the government of Greece on top. The government took responsibility for the Games' organisation in general. Under the auspices of the government, the Inter-ministerial Committee was created to coordinate preparations for the Olympics, followed by the advice body National Committee for the Olympic Games – Athens 2004. The Organising Committee for the Olympic Games – ATHENS 2004 was represented by the private sector. This organisation was supposed to operate as a free-market private entity, notwithstanding its entirely principal shareholder was the Greek government [IOBE 2015, p. 31].

The Olympic Games in Athens was assumed to be financed from four sources – the public sector, the Athens 2004 Committee, the *Worker's Housing Organisation* and funds from the private sector.

It is difficult to find reliable information about genuine numbers regarding the Athens Olympic Games. The vast majority of data is based on information presented by international institutions, experts in economics and sports as well as journalists. The first budget version assumed that the government would provide 2.5 billion EUR. That sum was supposed to have covered the expenditures on infrastructure projects. The estimates were verified over time and the amount raised to 4.5 billion EUR [Berman 2010, p. 16].

The public sector expenditures on the Games' organisation reached the sum of approximately 7.2 billion EUR. That cost did not include the 1.3 billion EUR expenditures incurred by the private investors and other entities on transportation, communication infrastructure projects, etc. and the 280 million EUR cost of The Olympic Village construction financed by

the *Worker's Housing Organisation* [IOBE 2015, p. 53]. Adding up all the above amounts, the total expenditures on the Olympic Games in Athens reached almost 8.8 billion EUR. This is an estimated budget provided by the public sector and private investors. The Olympic budget has become a subject of numerous discussions among the Greek Parliament. Prior to the opening ceremony, the newly elected conservative government accused previous socialist government of cost overrunning [de Quetteville 2004]. Some sources claim that the Olympic Games in Athens cost about 9-11 billion EUR [Sanburn 2012], while [Zimbalist 2016] estimates the cost at 16 billion USD. The above sums noticeably vary because of differences in the process of cost category inclusion concerning the comprehensive budget.

The responsibility of staging the Olympic event was on ATHOC (ATHENS 2004 Organising Committee for the Olympic Games). ATHOC had been supposed to be the private sector representative. One of its main obligation was to prepare a budget funded by private resources. The first version of the ATHOC budget established the spending level at 1.5 billion USD and this amount was included in the Athens' Olympic bid.

The first revision of ATHOC budget took place in May 2000. The new budget was balanced and estimated at 1.7 billion USD<sup>1</sup>. The EUR/USD exchange rate was at 1:1. The second revision was made in December 2001 and the budget was estimated at 1.9 billion USD. The updated budget was approved by the IOC [Athens 2004..., p. 122]. In December 2002, Athens' private sector budget was revised caused by changes in the expenditure structure. The amount became constant (1.9 billion USD). In the Olympic Year 2004, the expenditure was 1.968 billion EUR. The private sector budget (ATHOC and private sponsors) closed with an operating surplus of 130.6 million EUR. The sum of 124 million EUR covered the costs of auctions for services and products related to the Olympics (sports equipment, furniture, facility equipment) and other necessary actions (e.g. land expropriation expenses) for Games preparations [IOBE 2015, p. 52]. The final net surplus of the ATHOC is estimated at 7 million EUR [IOBE 2015, p. 52].

Summarising, the Athens 2004 Olympic Games' budget substantially extended preliminary assumptions. [Sanburn 2012] indicates that an underestimated budget, inadequate planning process and inefficient Olympic budget management are supposed to be the main causes of the above state.

The 2012 London Olympic Games governance model differed from the Athenian one. It was represented by the net of stakeholders. To implement the plans of staging the Olympics in London, close cooperation between three following key stakeholders was required [The London Organising Committee for the Olympic Games and Paralympic Games 2012, p. 17]:

- Central Government – to provide financial underwriting and political will.
- City/local government – to sign the Host City Contract and provide transportation and land.
- British Olympic Association – to submit the bid to the IOC.

The Olympic Games in London were scrutinised by three principals: the Government (represented by the Department for Culture, Media and Sport – the Secretary of State is the Olympic Minister, with Olympic matters overseen by the Cabinet Committee), the Mayor of London and the British Olympic Association (BOA) [National Audit Office 2007, p. 9]. Two new entities were established to take the lead in delivering the Games – the Olympic Delivery Authority and the London Organising Committee of the Olympic and Paralympic Games (LOCOG) [National Audit Office 2007, p. 9]. The Committee was running as a private body on the basis of a Joint Venture Agreement (JVA) between DCMS, BOA and the Mayor of London, responsible for the operational and staging aspects of the Games.

ODA was a public entity supervised by the Department for Culture, Media and Sport (DCMS) and established under the document *London Olympic Games and Paralympic Games Act 2006*. The ODA's responsibilities were site preparations, building new sports venues, managing them after the Olympics and providing their legacy usage. Apart from that, the ODA was obliged to deliver the Olympic Village, media facilities, infrastructure and transportation projects [NAO 2007, p. 12; Poynter and MacRury 2009a]. The London Development Agency was responsible for land acquisition at the Olympic Park site. Another public institution was the Greater London Authority (GLA). Being one of the signatories to the Host City Contract, it was mainly responsible for security and public safety, covering transportation policy, fire and emergency services, but also economic development, planning, culture and the environment. The Government was represented by the earlier mentioned Department for Culture, Media and Sport with overarching control for managing the Government's interests, responsibilities and overseeing the public bodies involved in the Games' organisational structure [NAO 2007, p. 12]. In the organisation of The London Olympic Games, many institutions representing the public and private sectors were involved. The most important was the Olympic Board supervising the rest of the institutions. The Olympic Board consisted of the Secretary of State for Culture, Media and Sport, Mayor of London, Chief of British Olympic Association, Chair of LOCOG and Chair of Olympic Delivery Authority [NAO 2007, p. 12].

The above-described core entities played the most important role in the organisational process but it cannot be forgotten that many other organisations were also involved such as Sport England or the Olympic Lottery Distributor. The responsibility of the organisation was disseminated throughout all engaged institutions,

<sup>1</sup> It is worth mentioning that the Paralympic Games budget was estimated at 130 million USD.

thus, no individual accountability appeared for the possible problems or shortcomings during the preparations.

Summarising, the organisational structure of the 2012 London Olympic Games consisted of a vast net of stakeholders. Each of them had significant input in the Olympic venture.

Both the public and private sector shared financial contribution to the Olympics. The public sector was represented by the Government (especially the ODA and the Exchequer), local councils (e.g. the Mayor of London) and the National Olympic Committee. The origin of the private sector financial input was from the LOCOG, TV broadcast companies, principal sponsors (TOP – The Olympic Partnership), as well as the LOCOG partners, sponsors and suppliers [Kitchin 2011, p. 133].

London's budget analysis will be presented at three periods – December 2004, when the final bid was submitted to the IOC, March 2007, when significant budget revision was done and May 2013, presenting the final budget report. The analysis allows to reveal how the budget assumptions evolved throughout the pre-Olympic time, as well as the financial result.

While London was submitting its official bid to the IOC in November 2004, the organisation cost was estimated at approximately 4 billion GBP. This sum comprised the public sector contribution of 3.4 billion GBP, the private sector participated in costs in the amount of 738 million GBP [House of Commons. Committee of Public Accounts 2008, p. 3-4].

A significant revision of the London Olympics' budget took place when the city was announced to be the host of the 2012 Olympic Games. In March 2007, DCMS and ODA revised the initial budget to the amount of 9.325 billion GBP. Compared to the November 2004 budget, this is 5.289 billion GBP more. This amount sustained until March 2009, despite of the global financial crisis. In May 2010, the Government decided to reduce the public financial resources from 9.3 billion GBP to 9.2 billion GBP [National Audit Office 2012, p. 23]. In May 2013, the expected public sector contribution in the Olympic Games preparation was 9.2 billion GBP. Moreover, it was announced that the Olympic budget will be balanced with the 528 million GBP surplus, provided that there will be no additional costs, which should have been covered from the public sector budget after the Olympics.

LOCOG mainly financed the Games from the private sector funds, supposing the LOCOG was the self-financed entity, i.e. the financial assets were claimed to have been covered by outward resources, e.g. sponsorship agreements, ticket sales, official merchandising and IOC financial payments. In case of lack of financial coverage from the LOCOG, the public sector guaranteed possible financial risks regarding the LOCOG activity would be refunded and secured [National Audit Office 2012, p. 29].

The first LOCOG budget plan dated November 2005 assumed balanced expenditures and revenues at 1.539 billion GBP. In March 2007, the expected ex-

penditures and revenues bound with the Games' organisation raised to the amount of 2.4 billion GBP, including the public sector participation in the LOCOG expenditures in the amount of nearly 1 billion GBP (989 million GBP). After the Olympics, the LOCOG published a report, presenting financial statements for September 2012, including the year of staging the Olympics. During this period, the expenditures were estimated at almost 1.897 billion GBP. The LOCOG total expenditure reached the accumulated value of almost 2.4 billion GBP. The final report published by LOCOG in May 2013 stated that the venture noted a 52.8 million GBP loss.

## Economic effectiveness comparative analysis of the Olympic Games in Athens and London

Financial analysis instruments enable estimation of the economic effectiveness of the Olympic Games' organisation. Particularly, it is fundamental while examining the relative quantities and financial burden on the scale of the whole host country.

In order to conduct thorough research of the ratios concerning the Olympics' expenditure (1)-(9), the financial data from the Olympic official reports and studies presenting both host cities' budgets has been used. The macroeconomic and demographic data have been derived from the Eurostat statistical base for the Olympic year in Athens (2004) and London (2012). Their value is a denominator for the ratios and completes the essential data needed to analyse the economic effectiveness of the Olympic Games in Athens and London. Expenditures during the Olympic Games have been defined as an amount of incurred expenditure at the moment of staging the Olympics in the host city.

The economic effectiveness ratios from the group (1)-(9) reached the following outcomes for the Olympic year (Table 1).

The analysis shows that the total expenditure for the Olympic Games per capita is amounted to 838,16 EUR. Taking into consideration Greece's economy, its relatively modest share in the global GDP, the result is fairly significant. Moreover, total expenditure for the Olympic Games' organisation accounted for as much as 9.94% of the total general government expenditure in 2004. That outcome reveals that the financial burden for the Greek economy has been highly undeniable, regarding the fact that estimations of total expenditure amount are divergent, depending on issued publications with budgetary accounts. The total expenditure for the Olympic Games' organisation has been 4.74% of Greece's GDP at market prices. In the Olympic year, the economic effectiveness ratios in London reached much lower rates than in Athens. The public sector expenditure for the Olympic Games has been accounted for at 0.56% of the United Kingdom GDP; 1.19% of the total general government

**Table 1.** The economic effectiveness ratios of the Olympic Games in Athens and London for the category of expenditure in the Olympic year

Ratio	Value	
	Greece	United Kingdom
(1) $\frac{\text{Public sector expenditure on the Olympic Games}}{\text{Gross Domestic Product at market prices}}$	3,72%	0,56%
(2) $\frac{\text{Public sector expenditure on the Olympic Games}}{\text{Total general government expenditure}}$	7,81%	1,19%
(3) $\frac{\text{Public sector expenditure on the Olympic Games}}{\text{Population}}$	658,30 €	174,49 € (146,44 £)
(4) $\frac{\text{OCOG expenditure on the Olympic Games}}{\text{Gross Domestic Product at market prices}}$	1,02%	0,11%
(5) $\frac{\text{OCOG expenditure on the Olympic Games}}{\text{Total general government expenditure}}$	2,13%	0,24%
(6) $\frac{\text{OCOG expenditure on the Olympic Games}}{\text{Population}}$	179,87 €	35,60 € (29,87 £)
(7) $\frac{\text{Total expenditure on the Olympic Games}}{\text{Gross Domestic Product at market prices}}$	4,74%	0,67%
(8) $\frac{\text{Total expenditure on the Olympic Games}}{\text{Total general government expenditure}}$	9,94%	1,44%
(9) $\frac{\text{Total expenditure on the Olympic Games}}{\text{Population}}$	838,16 €	210,09 € (176,31 £)

Source: Own estimations based on data from Eurostat, [Panagiotopoulou 2009, The 28<sup>th</sup> Olympic Games in Athens 2004, [w:] Olympic Cities: 2012 and the Remaking of London, p. 152-153], [IOBE 2015, The Impact of the 2004 Olympic Games on the Greek Economy, p. 49], [Athens 2004..., p. 131], [Gold 2011, London 2012, w: Olympic Cities. City Agendas, Planning and the World's Games, 1896-2016, p. 371], [House of Commons. Committee of Public Accounts 2008, p. 11], [National Audit Office 2012, p. 23], [DCMS 2013, Press Release], [National Audit Office 2007, p. 42], [London 2012. Report and accounts 2013, p. 55, 117]

expenditure and the total expenditure for the Olympic Games per capita has been at 146,44 GBP. In order to standardise the accounts, that sum was converted into EUR. Having taken the average exchange rate for 2012 GBP/EUR = 1.1916, the total expenditure per capita was estimated at 210 EUR. This amount is fourfold less for London than Athens.

Comparing the economic effectiveness of the Olympic Games in Athens and London, the latter city has definitely reached better outcomes. Obviously, the main reasons for that conclusion are differences in economic (GDP and total general government expenditure) as well as demographic ratios (population). Nevertheless, the UK's economy has managed to absorb the huge costs of the Olympics organisation better

than Greece. This research is justified with per capita ratios showing the expenditure per one resident in Greece and the United Kingdom. The UK economy is approximately tenfold bigger than Greece. A more developed country, with favourable macroeconomic indicators, is capable of dealing with the long-term financial burden of the Olympic Games preparations and staging the event much better. The economic effectiveness analysis results are just one of the issues consisting of the comprehensive effectiveness evaluation of the Olympic event. The second issue is to what extent the potential stemming from the Olympic investments could be fulfilled? It begs the question: is there an opportunity for the host country to derive profits from Olympic Legacy?

## Olympic Legacy in Athens and London

Olympic Legacy refers to economic, social, cultural and environmental development of a host city [Poynter 2009c, p. 13], including: infrastructure improvements in transportation, housing, public transport, regeneration of the most deprived or post-industrial areas, unemployment rate decrease, business activity enhancement, social inclusion and poverty decline.

Unfortunately, in the case of Athens, the city did not fully take advantage of the socio-economic development opportunity as a consequence of the Olympic Games. Nonetheless, the event itself relatively achieved organisational success. Ten years after the Olympic Games in Athens 2004, several global press agencies and magazines<sup>2</sup> published articles about the current state of the Olympic areas in Greece's capital. It turned out that the Olympic venues are in very bad condition, unused and disrupted due to lack of an appropriate management. In 2008, the estimated cost of venue maintenance was 784 million EUR, even though they resembled more an uninhabited city than a place where the biggest sporting event had been staged four years earlier [Zimbalist 2016, p. 70].

The negative results of Athens Olympic Legacy have been exacerbated by the global economic crisis and Greece has unfortunately become its shameful symbol. Many arguments are in favour of the statement that the costs of the Olympic Games in Greece could be partly contributed to the dramatic economic situation [Malkoutzis 2014].

In face of all the above facts, one question should be posed: why has Athens not managed to execute Olympic Legacy? Firstly, political instability, inappropriate administration of the Olympic venues and lack of vision and strategy after staging the Olympics might be perceived as the main reasons. It appears that Greece put too much focus on the preparations themselves, which had ended just few days before the Olympics' beginning. Struggling with severe delays and warnings from the IOC, Greece had to put a lot of effort (and money) into finalising Olympic investments, but unfortunately, they did not have enough financial resources to maintain these areas after the event [Govan 2011]. Secondly, cooperation between the public and private sector has not been established on an appropriate level. Public opinion accused the public sector representatives that entrepreneurs and developers benefited from the Olympics while the state did not have money to maintain the stadiums [Govan 2011]. Admittedly, evaluation of the Olympics in Athens is much more difficult because, on the one hand, sports fans all over the world had a great opportunity to witness the fantastic sporting spectacle but, on the other hand, the Games left behind unfulfilled potential, massive costs and debt.

The London Olympic Legacy plan has been one of the most ambitious over the last years [Zimbalist 2016, p. 114]. Initiators of London's candidacy to be the Games' host in 2012 put great emphasis on the effective usefulness of the post-Olympic infrastructure. With reason, the London Olympic Legacy plan stands in a row with Barcelona's, the 1992 Olympic Games' host.

The main premise of the London plan has been revitalisation and development of the East London boroughs. Formerly, this area had been a manufacture centre, surrounded by docklands. Technological changes in the 70s and 80s of the 20<sup>th</sup> century had led to the closure of many manufacturing plants, causing progressive deprivation and devastation of East London areas. One of the most important problems was lack of public transportation lines connecting East London boroughs with the city hub [Zimbalist 2016, p. 114]. Local communities were characterised by relatively high unemployment rates, social inequalities, insufficient quantity of housing supply in the proportion to population density.

The first part of the Olympic Legacy in London assumed proper use and management of The Olympic Park after the event. Before the beginning of the Olympics, The Olympic Park Legacy Company (OPLC) had been set up and became the owner of the Olympic Park. The main responsibility of the company was to manage the Park as well as lead long-term politics of the Olympic Legacy realisation. In April 2012, the above venture was replaced by the organisation London Legacy Development Corporation (LLDC). LLDC is under the auspices of the Mayor of London. Moreover, it cooperates with numerous public and private sector entities, local communities, domestic and international sport, cultural and recreational organisations. LLDC is also responsible for providing five- and ten-year strategies. The vision is to create new, dynamic metropolitan centre for London. Queen Elizabeth Olympic Park is projected to be a place contributing to changes in surrounding areas, influencing the residents daily living, promoting growth and investments for London and the United Kingdom.

The Olympic Park, apart from its primary sports function, has become a popular touristic destination. Moreover a strategy was created consisting of housing construction plans, public spatial economy and social infrastructure (including schools, libraries, health centres and meeting spaces for local communities). By 2023, it is planned that globally recognised sports events will have taken place, including the 2017 IAAF World Championships in London, as well as the creation of new workplaces, economic possibilities for the local communities, building 2,500 new houses and increasing the access to sports arenas and cultural events in the Olympic Park.

The Olympic Park is a strategic area stimulating East London development and transformation. According to governmental statistics, the Olympic Park location in this part of the city has positive impact on the local communities. In a survey conducted among residents, 69% answered that the Olympics had positive impact on the UK capital [DCMS 2012, p. 28]. Except

<sup>2</sup> Including Reuters, Huffington Post, Daily Mail, Politico, Times, The Guardian



for the investments in sports venues, public transportation is also widely developed in the East boroughs due to the Olympic event. Basic convergence indicators reveal that East London seems to be catching up with the remaining parts of London in terms of socio-economic situation [DCMS 2012, p. 33].

Despite the many positive effects of the London Olympic Games' organisation, a few aspects have not been achieved, especially, that the Games has not significantly affected the local economies in East boroughs, where the Olympic events had been concentrated. Several planned investments could not be carried out on account of lack of public financial resources and disinterest from the private investors [Zimbalist 2016, p. 120]. The Olympic Village construction was supposed to be financed by the private investor, but was finally sponsored using public money in the amount of 1 billion GBP. In 2011, right before the beginning of the Games, The Olympic Village had been sold to the Qatar Real Estate Agency for 275 million GBP [Boykoff 2012]. Organisers were also accused of the threefold cost overrun in relation to the initial plan in the Bid Book, which indicates that gentrification of East London boroughs was more aimed at wealth relocation understood as the number of investments made in these areas rather than to produce this wealth itself [Zimbalist 2016, p. 123].

Summarising, the Olympic Legacy in London can be appraised as relatively positive; but obviously, this depends on the groups of interest which were supposed to benefit from the Olympics utmost. It appears that the private sector turned the Olympics into success to the greatest extent by signing contracts providing lots of services dedicated to the Olympic event. Owing to the strategy of the post-Olympic infrastructure usefulness appropriately, the public sector has changed the character of East London boroughs, partly raising the standard of living for local communities. Undoubtedly, it is very difficult to reconcile the interests of all the engaged groups so that each of them would be the main beneficiary. The reality presented in the reports by government agendas is completely different than the actual state. In spite of numerous doubts and reservations of the real impact of the Olympic Games on the East London residents material situation, the Games itself and investments made due to the Olympic event can be perceived as very profitable to the UK capital.

## Conclusions

The Olympic Games' organisation could be a catalyst for positive changes in the host country economy. However, a potential candidate has to prove economic and political stability in order to reach organisational success. Consequently, it is easier to establish more predictable and transparent cooperation between the public and private sector. A more socio-economically developed country is able to derive potential from the Olympic event organisation more effectively and in a less burdensome man-

ner for public finances. This assertion is confirmed by the economic effectiveness comparative analysis of two host cities – Athens and London. The conducted analysis reveals that the UK, as one of the most developed global economies, has burdened the public finances less than in the case of Greece. The Olympic infrastructure management plan plays a very significant role, especially when it comes to sports venues and what kind of benefits from the Olympics' organisation are dedicated to the local communities.

The activity of the public and private sectors is also very relevant and crucial. In the case of Athens, a state-centred model in which the public sector had dominated was a relative failure. A model based on networks of stakeholders represented by London allowed to distribute the responsibilities and obligations more evenly and reasonably, having constrained the risk of possible failures and delays during the plan and investments realisation. The organisational success of London presented thorough coordination of activities and created a model of *governance* – a global sports event management process like the summer Olympic Games.

Another issue regards the Olympic Games' budgets. Expenditures declared in the submitted bids by the candidates are very often inadequately understated and the final account overrun several times as a result. Athens has been struggling with that problem after the Olympic Games in 2004, then fell into serious financial troubles. Moreover, the country has faced economic crisis. The London Olympic Games' budget also exceeded the initial bid plans. Nevertheless, London had a complex strategy and plan as to how the Games could be used for socio-economic development of the most neglected and deprived boroughs of the UK capital. This is the most important aspect which distinguishes the London Olympic Games.

In conclusion, the Olympic Games may be a great opportunity for socio-economic development in many fields. Fundamental aspects which determine the organisational success are the following: the host country's economic condition; political, economic and institutional environment and wide, strong support of the idea of making the Games expressed by the nation. Efficient and harmonious cooperation between the public and private sectors as well as establishment of appropriate, long-term Olympic infrastructure management plan seems to be the key to success. Without that, as history has proved in the past, even the most expensive and spectacular Olympic Games would not be able to generate success in the future.

## References

- ATHENS 2004 Organising Committee for the Olympic Games S.A. (ATHOC), 2005, *Official Report of the XXVIII Olympiad. Homecoming of the Games – Organisation and Operations I*, Liberis Publications Group Libecom SA, Athens, <http://library.la84.org/6oic/OfficialReports/2004/or2004a.pdf>, [accessed: 29.12.2015]

- BBC News, 2004, *Greece's Olympic bills doubles*, 12<sup>th</sup> November, <http://news.bbc.co.uk/2/hi/business/4007429.stm>, [accessed: 30.03.2016]
- Berman, G., 2010, *Financing the London 2012 Olympic Games*, Briefing Papers SN03790, House of Commons Library, [accessed: 08.03.2016]
- Boykoff, J., 2012, *What is the real price of the London Olympics*, The Guardian, <http://www.theguardian.com/commentisfree/2012/apr/04/price-of-london-olympics>, [accessed: 8.05.2016]
- CBC News, 2006, *Quebec's Big Owe stadium debt is over*, <http://www.cbc.ca/news/canada/montreal/quebec-s-big-owe-stadium-debt-is-over-1.602530> [accessed: 23.09.2015]
- DCMS, 2012, *Meta-Evaluation of the Impacts and Legacy of the London 2012 Olympic Games and Paralympic Games. Summary of Report 4: 'Interim Evaluation'*, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/224123/2012\\_Meta\\_Evaluation\\_Report\\_4\\_Summary.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224123/2012_Meta_Evaluation_Report_4_Summary.pdf), [accessed: 3.03.2016]
- DCMS, 2013, Public Sector Funding Package 528 m under budget, 16<sup>th</sup> July, Press Release, <https://www.gov.uk/government/news/london-2012-public-sector-funding-package-528m-under-budget>, [accessed: 8.03.2016]
- de Quetteville, H., 2004, *A budget disaster – but Greece feels the Games are at home*, The Telegraph, 7<sup>th</sup> August, <http://www.telegraph.co.uk/news/worldnews/europe/greece/1468879/A-budget-disaster-but-Greece-feels-the-Games-are-at-home.html>, [accessed: 30.03.2016]
- European Parliament, 2013, Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006, Brussels
- Eurostat, <http://ec.europa.eu/eurostat>, [accessed: 01.05.2016]
- Foundation for Economic and Industrial Research (IOBE), 2015, *The Impact of the 2004 Olympic Games on the Greek Economy*, Foundation for Economic and Industrial Research, Athens, [http://iobe.gr/docs/research/en/RES\\_05\\_F\\_15012015\\_REP\\_EN.pdf](http://iobe.gr/docs/research/en/RES_05_F_15012015_REP_EN.pdf), [accessed: 11.02.2016]
- Gold, J.R., Gold, M.M. (eds.), 2007, *Olympic Cities. City Agendas, Planning, and the World's Games, 1896-2012*, Routledge, London and New York
- Gold, M., 2011, *Athens 2004*, w: Gold, J.R., Gold, M.M. (eds.), 2011, *Olympic Cities. City Agendas, Planning, and the World's Games, 1896-2016*, Routledge, London and New York.
- Govan, F., 2011, *Greece's Olympic dream turned into an nightmare for Village residents*, 23<sup>rd</sup> June, The Telegraph, <http://www.telegraph.co.uk/finance/financialcrisis/8595360/Greeces-Olympic-dream-has-turned-into-a-nightmare-for-Village-residents.html>, [accessed: 5.05.2016]
- House of Commons. Committee of Public Accounts, 2008, *The budget for the London 2012 Olympic and Paralympic Games*, <https://www.publications.parliament.uk/pa/cm200708/cmselect/cmpubacc/85/85.pdf>, [accessed: 3.03.2016]
- International Olympic Committee, 2013, *Factsheet London 2012 Facts & Figures*, [https://stillmed.olympic.org/Documents/Reference\\_documents\\_Factsheets/London\\_2012\\_Facts\\_and\\_Figures-eng.pdf](https://stillmed.olympic.org/Documents/Reference_documents_Factsheets/London_2012_Facts_and_Figures-eng.pdf), Lausanne [accessed: 16.09.2015]
- Kitchin, P., 2011, *Financing the Games*, w: Gold, J.R., Gold, M.M., 2011, *Olympic Cities. City Agendas, Planning, and the World's Games, 1896-2016*, Routledge, London and New York
- Korbus, B.P., Strawiński, M., 2009, *Partnerstwo publiczno – prywatne. Nowa forma realizacji zadań publicznych*, 2<sup>nd</sup> edition., LexisNexis, Warszawa
- London East Research Institute of the University of East London, 2007, *A Lasting Legacy for London? Assessing the legacy of the Olympic Games and Paralympic Games*, Greater London Authority, London, <https://www.london.gov.uk/sites/default/files/archives/assembly-reports-econsd-lasting-legacy-uel-research.pdf> [accessed: 16.09.2015]
- London Legacy Development Company, 2015, *Queen Elizabeth Olympic Park and the surrounding area. Five year strategy: 2015-2020*, London, <http://queenelizabetholympicpark.co.uk/~media/lldc/lldc%20strategy%2020152020.pdf>, [accessed: 6.05.2016]
- London Legacy Development Corporation, 2015, *Ten Year Plan 2015/16 – 2024/25*, London, <http://queenelizabetholympicpark.co.uk/~media/lldc/ten%20year%20plan.pdf>, [accessed: 6.05.2016]
- Malkoutzis, N., 2012, *How the 2004 Olympics Triggered Greece's Decline*, 3<sup>rd</sup> August, Bloomberg, <http://www.bloomberg.com/news/articles/2012-08-02/how-the-2004-olympics-triggered-greeces-decline> [accessed: 5.05.2016]
- Matheson, V. A., 2006, *Mega-Events: The effect of the world's biggest sporting events on local, regional, and national economies*, Paper no. 06-10, College of the Holy Cross, Worcester, [http://college.holycross.edu/RePEc/hcx/Matheson\\_MegaEvents.pdf](http://college.holycross.edu/RePEc/hcx/Matheson_MegaEvents.pdf) [accessed: 13.08.15]
- National Audit Office, 2007, *Preparations for the London 2012 Olympic and Paralympic Games – Risk assessment and management*, London, <https://www.nao.org.uk/wp-content/uploads/2007/02/0607252.pdf>, [accessed: 21.11.2015]
- National Audit Office, 2012, *The London 2012 Olympic Games and Paralympic Games: post-Games review*, Report by the Comptroller and Auditor General, London, <https://www.nao.org.uk/wp-content/uploads/2012/12/1213794fr.pdf>, [accessed: 13.11.2015]
- OECD, 2010, *Local Development Benefits from Staging Global Events: Achieving the Local Development Legacy from 2012. A peer review of the Olympic and Paralympic Legacy for East London proposed by the Department of Communities and Local Government*, United Kingdom, <https://www.oecd.org/cfe/leed/46207013.pdf>, [accessed: 6.05.2016]
- Olszański, T., 1995/1996, *Citius, Altius, Fortius... Cavius!*, w: Polski Komitet Olimpijski, Polska Akademia Olimpijska, Olimpizm. Mity i rzeczywistość, Almanach VI, Spółka Wydawnicza HELIODOR, Lomianki, s. 140-144
- Panagiotopoulou, R., 2009, *The 28<sup>th</sup> Olympic Games in Athens 2004*, w: Poynter, G., MacRury, I. (eds.), *Olympic Cities: 2012 and the Remaking of London*, Ashgate Publishing, Farnham
- Poynter, G., 2009a, *London: Preparing for 2012*, w: Poynter, G., MacRury, I. (eds.), *Olympic Cities: 2012 and the Remaking of London*, Ashgate Publishing, Farnham

- Poynter, G., Roberts, E., 2009b, *Atlanta (1996): The Centennial Games*, w: Poynter, G., MacRury, I. (eds.), *Olympic Cities: 2012 and the Remaking of London*, Ashgate Publishing, Farnham
- Poynter, G., 2009c, *Literature Review: Olympic Legacy Governance Arrangements*, London Assembly Economic Development, Culture, Sport and Tourism Committee, Londyn, <https://www.london.gov.uk/moderngov/Data/Economic%20Development,%20Culture,%20Sport%20and%20Tourism%20Committee/20100224/Agenda/6b%20OPLC%20Literature%20Review%20PDF.pdf>, [accessed: 03.09.2015]
- Rytel, M., 2009, *PPP – metoda zamówienia publicznego czy sposób finansowania?*, w: *Praca zbiorowa, Partnerstwo publiczno – prywatne w praktyce. Przemysł, przygotuj, przeprowadź*, Wydawnictwo C.H. Beck, Warszawa
- Sanburn, J., 2012, *Was It Worth It? Debt-Ridden Greeks Question the Cost of the 2004 Olympics*, Time, 9<sup>th</sup> July, <http://olympics.time.com/2012/07/09/amid-economic-turmoil-some-greeks-look-back-at-2004-olympics-as-losing-proposition/>, [accessed: 30.03.2016]
- The London Organising Committee of the Olympic Games and Paralympic Games 2012, 2012, *Olympic Games Official Report. Volume 1*, LOCOG, London, [http://www.olympic.org/Documents/Reports/Official%20Past%20Games%20Reports/Summer/2012/ENG/2012-RO-S-London\\_V1\\_I\\_eng.pdf](http://www.olympic.org/Documents/Reports/Official%20Past%20Games%20Reports/Summer/2012/ENG/2012-RO-S-London_V1_I_eng.pdf), [accessed: 8.11.2015]
- The London Organising Committee of the Olympic Games and Paralympic Games 2012, 2013, London 2012 *Report and Accounts*, [https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/Games/Summer-Games/Games-London-2012-Olympic-Games/Facts-and-Figures/LOCOG-Report-and-Accounts-for-the-18-Month-Period-Ended-30-September-2012-London-2012.pdf#\\_ga=1.98734302.1113231367.1480708186](https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/Games/Summer-Games/Games-London-2012-Olympic-Games/Facts-and-Figures/LOCOG-Report-and-Accounts-for-the-18-Month-Period-Ended-30-September-2012-London-2012.pdf#_ga=1.98734302.1113231367.1480708186), [accessed: 8.11.2015]
- Zimbalist, A., 2016, *Circus Maximus. The Economic Gamble behind hosting The Olympics and the World Cup*, Wydanie II, The Brookings Institution, Washington

# Volunteer profile and their motives for participation in the Volunteer Programme during the FIVB Men's Volleyball World Championship Poland 2014.

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## Summary

The aim of following paper is to present silhouette and work of a sports volunteer during international sports events in Poland. Profile and participation motives in Volunteers Program were described based on FIVB Volleyball Men's World Championship Poland 2014 example. Research process required use of following methods: text analyses, in-depth interview and undisguised participant observation of the market. The study showed that the largest group of volunteers was constitute by women (67,06%) between 19-24 years old. 70.59% participants of voluntary programme had advanced level of English and 70.25% declared knowledge of additional foreign language. Average time of working during tournament contained 6 hour in match day. Examinations showed that motives of participation in Volunteers Program has changed its basic altruistic role. Sports volunteers are linking personal passions resulting from an interest in given sports discipline with building of professional experience, with getting the classification and basic competence constituting the base to the further professional development. Voluntary programs might be treat as an internship.

**Key words:** Sports volunteering, volunteer activity, organization of sports events

## Introduction

Volunteering is a much less common phenomenon in Poland than in Western countries. Lack of volunteering tradition handed down from generation to generation might be caused by the political situation in Poland existed from 1947 to 1989. According to Jolanta Żyśko (2011), the tradition of volunteering in post-communist countries is different from that of countries not affected by this phenomenon. In times of Communism, community work, being the reflection of today's volunteering effects, was compulsory and free of charge. Volunteering was treated as practice for learning a profession without reward (Lalak & Pilch). In countries of the post-Communist block (Poland, Romania, Bulgaria), voluntary services evoke negative associations, mainly because they have weak background activity of persons remembering that period in the area of action and they associate it with voluntary and work for free (Żyśko 2011).

The purpose of following paper is to examine mega-event volunteer motivations of hosts in Poland based on the example of the FIVB Men's Volleyball World Championship.

Volleyball plays an important part in Polish social culture and is sought-after by the community. This the-

ory is strongly supported by high attendance at matches and newly-set viewership records. It is also one of the most generating disciplines regarding media value. One might claim that placement of volleyball on the Polish sports market is unusually powerful and has become recognized and respected all over the world.

In 2014, Poland was the host of the FIVB Men's Volleyball World Championship. Carrying out such a great sports event is a big challenge both for logistics and finance. Its success is dependent on many factors, including human commitment, dedication and hard work.

## Voluntary work in sport

Volunteering comes from the Latin word *voluntas*, which means free will and unforced choice. It is considered as an altruistic activity during which an entity or group provides services for no financial gain to benefit another person, group or organization (Wilson 2000). Contemporary researchers have been trying to set down the basic borderline between formal and informal volunteering. Formal volunteering has been defined as taking place as part of the volunteer's involvement in an organisation while informal volunteering has been regarding as 'helping' out a friend or a neighbour on an individual basis (Harper, 2015).

The International Labour Organization (ILO, 2011) defined volunteering as „unpaid non-compulsory work; that is time individuals give without pay for activities performed either through an organization or directly for those outside their own household”. Volunteering is a free and conscious act for other people or organizations that goes beyond family and friendships. The positive effects are found in the educational and occupational attainment promoting active participation in social life (Cichocki 2008). Volunteering is a type of activity that is carried out deliberately, voluntarily, for the benefit of others or the whole community, without getting paid a salary (Żyśko 2011). Volunteers can be anyone in any area of social life and wherever this kind of help is needed (Jordan & Ochman 1997).

Regulating the area of volunteering activities assumes different forms in various countries. They mainly stem from national legislation in this area and the historical and cultural traditions of the respective country. Poland belongs to a group of countries with legal regulations in relation to voluntary organizations (Żyśko 2011). The Ministry of Sport and Tourism of the Republic of Poland distinguished two forms of sports volunteering. The first includes short-term sports volunteering. The second is involved with permanent voluntary activity in sport (Ministry of Sports and Tourism, 2010). Volunteering activities are regulated in Poland through the Act of 24 April 2003 on Public Benefits and Volunteerism. This act defines the conditions for carrying benefits out by volunteers and receiving these benefits by organizations (Act from 24 April 2003 on public benefiting action and voluntary work). The volunteer is not an employee within the meaning of the Labour Code, and the beneficiary is not an employer (Wojnowska 2005). The role and significance of sports volunteering has been recognized by the European Union, which, by concluding in the Treaty of Lisbon, emphasizes its special nature, voluntary structure, social and educational function. According to this statement, it contributes to promoting sport ventures in Europe (Traktat Lisboński).

Contemporary volunteering fulfils the following functions: psychological, social, educational, educational and economical. The psychological function is related to satisfying the needs of belonging, self-fulfilment and recognition. The social function is oriented towards establishing social bonds. The educational function includes activities related to the active form of searching for a place on the labour market and the socio-occupational position. Economical function is understood as participation in creating specific infrastructure (Sosnowski 2008).

The length of a volunteer's service is often described as long-term, short-term or episodic (Connors, 2011). Long-term volunteers are involved in an organization for an extended period of time without a specified end date of working. Short-term volunteers devote a limited amount of time to an organization. This type of volunteer is often described as a one who „provides service regularly for short periods of time. Episodic volunteers

rarely provide services to an organization, they usually last a single day or concern a multiday event” (Macduff, 1999). There is no, one stiff template of defining episodic volunteering. Some volunteers involve themselves one time in a task on one specific occasion (like a major sporting or cultural events); others commit themselves to a series of events over a period of time; and the third group links episodic volunteering with long-term involvement within the same or another organisation (Macduff, 2005).

Sports volunteering is a combination of two areas. The first is the idea of volunteering in itself, and the second is the activity of broadly understood sport (Lipiec 2011). Organizations, associations or sports clubs, on account of financial barriers, seek for volunteers who can support their action and be engaged into their development. The work and help of people who do not receive financial benefits are the basis for the organization of worldwide sports events, irrespective of the greatness of their rank. Much research shows that mega sporting events like the Olympic Games, the FIFA World Cup or the NFL Super Bowl would not be possible to manage without the recruitment of a large number of volunteers (Giannoulakis et al., 2008). Volunteers have always played a significant role in the sport and physical activity sector. Without them, most activity would not happen. Therefore, episodic volunteers are engaged into the organizing process.

## Sport Event Volunteer Motivations

A large number of contemporary theories have been applied to understand the nature of volunteer motivation. Initially, volunteering was considered as an altruistic act reflecting a caring approach towards the community. Many studies show that motivation to volunteer is multi-dimensional and arises out of the divide between altruism and self-interest.

The Motivation to Volunteer (MTV) scale created by Cnaan and Goldberg-Glen (1991) showed that motivational aspects can be both egoistic and altruistic. The Volunteer Function Inventory (VFI) scale developed by Clary et al. (1998) contains six different sets of motives: *altruistic, skill development, career opportunities, social networking, self-esteem and personal development*. Farrell et al. (1998) and Twynam et al. (2003) place volunteer motives into four categories: *purposeful, solidarity, external traditions, and commitments*. *Purposeful* motives may follow from a willingness to assist the community and the event. *Solidarity* motives are involved with desire of acquiring practical or education experiences and building a platform from social exchange. *External tradition* motives refer to the use of free time and family traditions. *Commitment* reasons relate to prestige and self-satisfying factors. Expanding the research by Farrell et al. (1998) and Twynam et al. (2003), Strigas and Jackson (2003) added a fifth motivational category called *material rewards*, connecting the rewards and stimulus volunteers received from working the event.

MacLean and Hamm (2007), making use of the five-dimensional model developed by Strigas and Jackson (2003), added *love of sport* as a factor of volunteer motivation. In their research, they showed demonstrated, as they called it, *egoistic factors* (discover new interests, improve skills, meet new people and interact with others) and *leisure factors* (fill free time, relieve stress) were the leading motivators.

According to previous research, Bang and Chelladurai (2009) built the Volunteer Motivations Scale for International Sporting Events (VMS-ISE). The model included 6 categories: *expression of values, personal growth, career orientation, extrinsic rewards* and *interpersonal contacts*. The sixth, new factor, *patriotism*, was concerned with the pride from one's country. After deeper studies, Bang and Ross replaced the VMS-ISE category of *patriotism* with *community involvement*, understood as a desire to create a successful event connected with gaining prestige from hosting the event.

## Methodology and data collection

The present paper is an attempt to analyse voluntary work in sports during international sports events in Poland and the volunteers' motives for participation in the Volunteer Programme. The profile was described on the basis of the example of volunteers working during the FIVB Men's Volleyball World Championship Poland 2014 in Cracow.

The research process required use of following methods: text analyses, in-depth interview and undisguised participant observation of the market. The first method involved literature concerning genesis and development of voluntary work in sport, which provide a theoretical background. Undisguised participant observation was conducted over the duration of the FIVB Men's Volleyball Championship Poland 2014 group stage (group D, Kraków Arena in Cracow), where the author worked as a volunteer coordinator. Active participation in the management field during the sports event creation allowed to conceptualize the real image of the organizational side. In-depth interview executed in cooperation with volunteers appeared to complete and enrich the researched materials.

## Socio-demographic characteristics of volunteers

According to the Polish Volleyball Federation announcement, 3,978 candidates applied via the online registration system to work as volunteers during the FIVB Men's Volleyball World Championship Poland 2014. Of these, 700 candidates were chosen. The highest amount of applications (846 willing) was received by the host city Cracow. 84 of them were chosen to be volunteers (<http://poland2014.fivb.org>).

Socio-demographic characteristics of volunteers were described based on application form. As a volunteer coordinator, the author had full access to data.

84 volunteers worked during the first round of the FIVB Men's Volleyball World Championship Poland 2014 in Cracow. Cracow was the host city of the first round where 6 national teams took part in D Group games: France, Italy, the United States, Belgium, Iran and Puerto Rico. Matches were played in the round-robin system. The system of conducting games included 3 matches per day. They were held every other day at fixed times: 1:00 p.m., 4:30 p.m. and 8:15 p.m.. During the first round from the 31<sup>st</sup> of August to the 7<sup>th</sup> of September 2014 in Cracow, 15 matches took place (<http://poland2014.fivb.org>).

It is important to emphasize that the massive volleyball involvement in Poland and the scale of the show is evidence of the fact that the D group games at Cracow Arena enjoyed no less interest among fans than the matches of Polish national team. „The „Group of death” attracted a total of 114,250 supporters to Cracow Arena. Statistics showed that the attendance record (14,100 spectators) was recorded during the match between the USA and Italy (<http://www.pzps.pl>). This colossal attention emphasizes the role and significance of volunteers during the organizational process of this sports event.

The volunteers' main task was to support the organizers in particular areas of functioning of the mass sports event. Volunteers were divided into the following sections:

1. Information services
2. Accreditations
3. Marketing
4. Communication and new media
5. Press office
6. Medicine
7. Anti-doping
8. Animation
9. Leader

The largest group of 50 volunteers representing 59.52% of the entire group working during the Men's FIVB Volleyball World Championship Poland 2014 in Cracow performed direct tasks associated with the functioning of information services. This group had direct contact with spectators on the sports arena. Validating tickets at entrances, checking their genuine value, providing all necessary information concerning places in sectors, entries and evacuation routes were included in their tasks. Volunteers of information services cooperated directly with the security company employed to protect the arena. 9.52% of volunteers (8 people) worked in the marketing department. 8.33% of the volunteers supported the press office. 7.14% of the volunteers were involved in the communications and new media sector (6 people). 4.76% (4 people) were involved in anti-doping work. Informing the competitor of the drug test results and escorting them to the consultation room were included in the volunteers' tasks. 3.57% of the volunteers (3 people) supported the accreditation department. About 2.38% of the volunteers (2 people) were involved in medicine, animation and leadership.

The data shows 57 volunteers were women (67.06%) and 17 were men (32.94%). This trend characteristic for Poland is confirmed by the research conducted in 2014 among 60 Poles, who at least once, participated in mass sports events as volunteers. The results of corresponding research show that 60% of sport volunteers in Poland are women (Matuła & Nessel 2014). The opposite proportion occurs in most European Union countries and Australia, where about 62% of sports volunteers are men (Downward et al. 2009).

80.95% (68 people) participants in the Volunteer Programme were between the age of 19 and 24, 9.52% (8 persons) of volunteers were between 25 and 30. 5.98% (5 persons) of respondents were between the age of 25 and 30. During the recruitment process, the necessary condition was to be of age, therefore the lack of volunteers under the age of 18. Only 3.57% of people were 18 years old. Similar results were obtained in 2014, in which a group of 60 Poles who had ever participated in sports volunteering were examined. The surveys showed that 63% of respondents were between the age of 21 and 25. Individuals above the age of 30 and below 20 were significantly less common (Matuła & Nessel 2014).

Examination showed that the Volunteer Programme for the FIVB Men's Volleyball World Championship Poland 2014 was most popular among those at a college age. This could be treated as a great opportunity to collect one's first work experience.

The entire group used English. 70.59% of volunteers were fluent in both written and spoken form. 21.18% declared a good understanding of both written and spoken English. 8.24% had basic English skills. 70.24% of the volunteers declared the knowledge of a second foreign language: German (50.85%), French (27.12%) and Russian (22.03%).

Volunteers worked in shifts. They spent an average of 6 hours per day working. „Everyone could enter in terms suitable for them, which does not change the fact that we were spending all of our free time at the sports arena. For every volunteer, the Championship became a top priority at this time” said one of volunteers. This trend characteristic is confirmed by the research from 2014 in Poland in which 66% of the volunteers declared work between 4-8 hours a day (Matuła & Nessel 2014).

## Motives for participation in volunteering

Participation motives were collected during in-depth interview, and consisted in presenting open questions to the respondents, leaving them complete freedom of expression. The method enables a personal and in-depth denomination that allows to obtain honest, sometimes surprising answers that may constitute new aspects of the issues under investigation. Open questions also allow to get information embedded in a certain context. Respondents were asked a lot of specific questions to

compare their statements. All interviews were recorded. The author had full and daily access to the whole group of 84 volunteers. Data analysis in this study was based on volunteers' declarations.

Volunteers were asked to give reasons for participating in the sports Volunteer Programme during the FIVB Men's Volleyball World Championship Poland 2014. The respondents were asked open questions, which allowed for complete freedom of speech, enabling personal and in-depth confession, thanks to which they were able to identify new, previously unknown, aspects of research. Based on the volunteers' statements, the author created 7 motivational factors.

### Factor 1: Interest in sport and the desire to learn the process of creating sports events.

Participation in volunteering provides the opportunity to take part in a world-class event, from the organizer perspective. Desire to learn the process of creating sports events was the main force driving the decision to participate in the Volunteer Programme for almost every volunteer.

“Considering that I am working alone in “this sport” and organizing matches on a lower academic level, I wanted to see what it looked like in “big format”, get to know the structure, departments, organization and the multiplicity of activities”.

“I have been associated with a sports event organization in Kraków for many years. As the Vice President of the Academic Sport Association at the University of Economics in Cracow, I have had many opportunities to take part in the creation of Polish Academic Championships and other events related to indoor sports. Participating in sports volunteering during the FIVB Men's Volleyball World Championship Poland 2014 was a great opportunity to get to know the basics of organizing an international sports event. The desire to create the history of Kraków Arena and Polish sport was one of the main factors influencing the decision to volunteer”.

### Factor 2: Building contacts in the sports industry.

Volunteering opens many doors and helps to develop new networks, through which one may hear about job openings. This fact was recognized by most people participating in the Volunteer Programme.

“Volunteering has given me the opportunity to meet and collaborate with people who work in sports associations, the media, which greatly facilitated my subsequent work at my club and broadened my knowledge in the volleyball industry”.

### Factor 3: Getting to know new places, cities and sports facilities.

Sport infrastructure is still in the process of development in Poland. Before Kraków Arena was built, there was no sports facility that could host sports events at national or international levels. Volunteering was an opportunity to get acquainted with the newly opened sports arena for many of respondents.

“Since I was a child, I trained and was interested in volleyball, which later transferred to my organizing passion. The emergence of the new Kraków Arena was a significant event for people like me. Participation in volunteering during the championship allowed me to become part of the history of this facility”.

**Factor 4: Possibility to be in the middle of an event’s action.**

Love of sport and the possibility to have a chance at being close to event action and sports heroes was a strong motive for participating in the Volunteer Programme for most of the volunteers. “One of the specific tasks entrusted to me during volunteering was to change points during the Italy-France match on scoreboard located on the court. This simple act proved to be a great challenge, with the awareness of the presence of 15,000 spectators and those in front of their televisions. I believe that this experience allowed me to get to know the feelings that accompany volleyball players being in front of a tremendous audience”.

**Factor 5: Platform for friendship.**

Volunteers consist of people from all walks of life and constitute a great socialization platform. “Through volunteering, I met wonderful people who are, like me, passionate about volleyball”. 63% of respondents were between the age of 21 and 25, social impact being greatly important for people at this age.

**Factor 6: Check yourself in new surroundings, develop passion and skills.**

Volunteering was also treated as a platform to learn new skills and try new things in a relatively risk-free environment.

“Starting from sending the application, till the last moments spent at the Arena, that whole time, I can call one big test! Sending the application - wondering if my candidacy would be good enough to be chosen. After that, the organizational meeting, separating people into groups focused on specific areas. Wondering if I could manage the tasks entrusted to me and my responsibilities”.

Some speakers said that volunteering is a valuable way to either reinforce level of interest or possibly even discover a career path. It was a good ground to explore entirely new fields – possibly discovering interests of which one was previously unaware. “Associated tasks in volunteering is a tremendous amount of new experience. Learning to work in a group, working under the pressure of time, often inventing creative solutions to emerging problems, working in an international environment, one’s self, skills and linguistic development are the most important factors”.

**Factor 7: Building professional experience**

“Participation in volunteering is a platform for me to gain work experience. I treat it as an internship”. Volunteer work can broaden experience and provide new

skill development in a way that is often not possible or available elsewhere. The fact of carrying about the community, possessing the time necessary to fit volunteer work into schedule, willing to learn new things are all attractive attributes for a prospective employer. In fact, voluntary work can be the building blocks of one’s resume.

**Conclusions**

The aim of the following paper was to present the profile and motives for participation in volunteer work during the FIVB Men’s Volleyball World Championship Poland 2014. Researchers showed that the largest group constituted women (67.06%) between the age of 19-24. 70.59% volunteers had an advanced level of English and 70.25% declared knowledge of an additional foreign language.

The study shows that Polish sports volunteers link personal passions resulting from an interest in a given sports discipline with building professional experience, getting the classification and basic competence constituting the basis for further professional development. However, seeing the game is not a part of volunteering responsibilities, “love of sport” is also one of the motivating factors (MacLean and Hamm, 2007; Giannoulakis, et. al., 2008). This factor is also important for Polish volunteers. The idea that working a mega sporting event would enhance one’s resume was one of the strongest motives among volunteers at the age of 30 and below. This motive was also involved the demographic to attempt gaining access to the sport management field for the first time. Volunteers with lower incomes and lack of experience were most strongly motivated by “personal growth” and “career enhancement” opportunities that volunteering at a mega sporting event provide (VanSickle, Pierce, Diacin, 2012).

Investigation showed the lack of social initiative of people over age 40. This might be connected with the political situation existing in Poland from 1947 to 1989. The lack of voluntary service traditions concerns this generation, people born in the years 1961-1983 (or until 1985), called the generation of PRL. Voluntary work was treated as forced activity. One of the main barriers in the development of volunteering in Poland can therefore be considered lack of tradition of voluntary service, handed down from generation to generation.

Motives for participation in the Volunteer Programme have changed the basic altruistic role. Organization of sports events has multidimensional meaning, going beyond its sports role. The FIVB Men’s Volleyball World Championship Poland 2014 was not only a sports product but also an excellent platform for developing social activity and gaining professional skills and experience for volunteers. Sports volunteering is an excellent platform for gaining social and professional competences. It allows to develop new interpersonal relationships, pursue passion, teach synergies and



provide a sense of meaning and belonging. Volunteer programmes allow organizations to use the skills and commitment of volunteers, reducing the costs of hiring a large number of employees. The work of sports volunteers is the foundation of existing international sports events and contributes to improving their image through the implementation and promotion of social activity.

## References

- Bang, H. and Chelladurai, P. [2009] „Development and validation of the volunteer motivations scale for international sporting events (VMS-ISE)”, *International Journal of Sport Management and Marketing*, Vol. 6 No. 1.
- Bang, H. and Ross, S. [2009] „Volunteer motivation and satisfaction”, *Journal of Venue and Event Management*, Vol. 1 No. 1.
- Cichocki A. [2008] Szkoła w służbie wolontariatu, [w:] „Zeszyty naukowe”, Wyższa Szkoła Suwalsko-Mazurska im. Papieża Jana Pawła II w Suwałkach, nr 18/2008.
- Clary G., et al. [1998] „Understanding and Assessing the Motivations of Volunteers: A Functional Approach”, *Journal of Personality and Social Psychology* 74.
- Cnaan R. and Goldberg-Glen R., [1991] „Testing the Involvement Profile (IP) Scale in the Context of Selected Recreational and Touristic Activities”, *Journal of Leisure Research* 23.
- Connors T. D. (ed.) [2011] *The volunteer management handbook: Leadership strategies for success*, Vol. 235. New York: John Wiley & Sons
- Downward P., Dawson A., Dejonghe T. [2009] *Sports economics: theory, evidence and policy*, Routledge, New York.
- Farrell, J.M., Johnson, M.E., and Twynam, G.D. [1998] „Volunteer motivation, satisfaction, and management at an elite sporting competition”, *Journal of Sport Management*, Vol. 12 No. 4.
- Giannoulakis, Chrysostomos, Chien-Hsin Wang, and Gray [2008], „Measuring Volunteer Motivation In Mega-Sporting Events”, *Event Management* 11.s
- Harper, H. [2015] *Volunteering and Performance: Scotland Performs: The case for a new volunteering standard Volunteer Scotland*.
- International Labour Organization [2011] *Manual on the measurement of volunteer work*. Switzerland: ILO Geneva. Retrieved from [http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms\\_167639.pdf](http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_167639.pdf).
- Jordan P., Ochman M. [1997] *Jak pracować z wolontariuszami*, Warszawa.
- Kromolicka B. [2005] (red.) *Wolontariat w obszarze humanistycznych wyzwań opiekuńczych*, Toruń.
- Lalak D., Pilch T. [1999] (red.) *Elementarne pojęcia pedagogiki społecznej pracy socjalnej*, Warszawa.
- Lipiec J. [2011] *Aksjologiczne podstawy wolontariatu* [w:] Nowocien J. i Zuchora K., (red.) *Wolontariat w edukacji, sporcie, w ruchu olimpijskim i paraolimpijskim*, Estrella Sp. z o. o., Warszawa.
- Macduff, N. [1999] *Episodic volunteering* [in:] T.D. Connors (ed.), *The volunteer management handbook*, New York: John Wiley & Sons.
- Macduff, N. [2005] „Societal Changes and the Rise of the Episodic Volunteer” [in:] J. Brudney (ed.) „Emerging Areas of Volunteering”. *ARNOVA Occasional Paper 1 (2)*, Indianapolis: ARNOVA.
- MacLean, J. and Hamm, S. [2007] „Motivation, commitment, and intentions of volunteers at a large Canadian sporting event”, *Leisure/Loisir*, Vol. 31 No. 2.
- Matuła M., Nessel K. [2014] *Sylwetka wolontariuszy oraz ich rola w organizacji imprez sportowych w Polsce* [w:] Nessel K. i Wszendybył- Skulska E. (red.) *Organizacja marketing imprez sportowych. Młodzi o sporcie*, Wydawca: Katedra Zarządzania w Turystyce Uniwersytetu Jagiellońskiego, Wydanie 1, Kraków.
- Ministerstwo Sportu i Turystyki [2010] *Co to jest wolontariat sportowy* [dok. elektr.] <http://www.msport.gov.pl/wolontariat-sportowy>.
- Nessel K. i Wszendybył-Skulska E. (red.) [2014] *Organizacja marketing imprez sportowych. Młodzi o sporcie*, Wydawca: Katedra Zarządzania w Turystyce Uniwersytetu Jagiellońskiego, Wydanie 1, Kraków.
- Nowocien J. i Zuchora K., [2011] (red.) *Wolontariat w edukacji, sporcie, w ruchu olimpijskim i paraolimpijskim*, Estrella Sp. z o. o., Warszawa.
- Sosnowski T. [2008] *Wolontariat jako dar serca*, [w:] „Zeszyty naukowe”, Wyższa Szkoła Suwalsko-Mazurska im. Papieża Jana Pawła II w Suwałkach, nr 18/2008.
- Strigas, A.D. and Jackson, E.N. [2003] „Motivating volunteers to serve and succeed: design and results of a pilot study that explores demographics and motivational factors in sport volunteerism”, *International Sports Journal*, Vol. 7 No. 1.
- Traktat lizboński, Rozdział III Edukacja, kształcenie zawodowe, młodzież i sport, ART. 165.
- Twynam, G.D., Farrell, J.M., and Johnston, M.E. [2003] „Leisure and volunteer motivation at a special sporting event”, *Journal of the Canadian Association for Leisure Studies*, Vol. 27 No. 3.4.
- Ustawa z dnia 24 kwietnia 2003 r. o działalności pożytku publicznego i o wolontariacie [dok. elektr.] <http://isap.sejm.gov.pl/DetailsServlet?id=WDU20030960873>.
- VanSickle J. L., Pierce D. A., Diacin M., [2015] „Volunteer motivations at the 2012 Super Bowl”, *International Journal of Event and Festival Management*, Vol. 6 Issue: 3.
- Wilson J. {2000} *Volunteering, Annual Review of Sociology*. 26: 215.
- Wojnowska E. [2005] *Wybrane aspekty prawne wolontariatu*, [w:] Kromolicka B. (red.) *Wolontariat w obszarze humanistycznych wyzwań opiekuńczych*, Toruń.
- Żyśko J. [2011] *Wolontariat Polaków w sporcie na tle aktywności wolontarystycznej mieszkańców Europy*, [w:] Nowocien J. i Zuchora K., (red.) *Wolontariat w edukacji, sporcie, w ruchu olimpijskim i paraolimpijskim*, Estrella Sp. z o. o., Warszawa.
- <http://poland2014.fivb.org/>  
<http://www.krakowarena.pl/>  
<http://www.pzps.pl/>

# Impact of European Junior Swimming Championships in Poznan on Tourism and City Image in the opinion of Athletes

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## Summary

The purpose of this article is to examine tourist behaviour of participants of the European Junior Swimming Championships in Poznan and to examine the opinions of participants regarding this sporting event on its influence on the image of the city.

Through the use of simple random sampling, a number of 210 swimmers participated in the study during the European Junior Swimming Championships held in 2013 in Poznan, Poland. Methods of the study included a diagnostic survey, a standardized interview technique and an interview questionnaire. All questions were closed-ended in nature and were analysed using the Likert-scale. Results show that more than 60% of respondents claimed that the European Junior Swimming Championships has positive impact on the image of the city of Poznan. More than 70% of them rated the impact of the event on the city to be 10.0 (on the Likert-scale). More than 70% of athletes participated in tourist activities such as sightseeing (70.7%). The average rating of satisfaction of the event was rated at 8.8 (Likert-scale) and 82.8% of athletes claimed they would return to Poznan in the future. The survey results additionally indicated gaps regarding the city's cultural offers for tourists during the sporting event. A sample of 210 swimmers completed the questionnaire. The sample was selected in such a way as to ensure proper representation of the obtained results. Simple random sampling, which is a draw without return, was used. Information on the expected number of participants was used to determine the sample size. Calculations were used for the sample size, for the finite population. It was assumed that the maximum error of estimation ( $e$ ) at a 95% confidence level did not exceed 4%.

Results of this empirical case study provide a source of information for event organisers, and those responsible for the development of sport and tourism on the scale of impact of international sporting events. While most research participants in the current literature were sports fans, this study addressed the topic from the perspective of active participants of the event (e.g. athletes). The paper presents the results of empirical research, case study – European Junior Swimming Championships.

**Key words:** sport tourism, sporting event, city image, European Junior Swimming Championships

## Introduction

The purpose of this article is to examine the tourist behaviour of the participants of the European Junior Swimming Championships held in 2013, in Poznan (Poland), and to examine the opinions of participants regarding this sporting event on its influence on the image of the city in which the competition took place. Research concerning the impact of sporting events on the development of tourism in the city and improvement of image is currently very popular [e.g. Kim et al. 2014], but usually these types of diagnostic surveys are conducted among sports fans (for example, during the European Football Championships), thus in the study, we decided to check the tourist behaviour and opinions on the image of the city among the active participants of the

event – i.e. swimmers. The authors of this article consider the image as a way of perceiving the city in the opinion of athletes.

## Theoretical background – the impact of sporting events on the development of tourism and the improvement of the image of cities and regions

In today's world, sport is increasingly important in the socio-cultural dimension, including tourism, and sport tourism should be seen as an autonomous phenomenon of our times, reflecting current trends, needs and lifestyles. At present, there are strong links between sport

and tourism. Sporting events stimulate dynamic growth of the tourism sector and influence not only local communities and whole societies, but also individuals. Sport tourism is becoming an important part of people's lives, where sport plays a significant role in life. Never before was sport tourism so popular, and sports and tourist activities have become a mega-trend in the modern world.

*The World Travel Market Report* published at the London Sports Tourism Conference in 2011 clearly highlighted that big sporting events sometimes attract more tourists than beautiful beaches, sights or unusual landscapes, and as many as 80% of the cities and regions hosting the largest sporting events in the world have noticed that not only athletes but also fans become more and more typical tourists [*Report World Travel Market 2011*]. That is why sport tourism (especially sport event tourism) today is one of the fastest growing branches of the tourism industry. It is estimated that 15-30% of the world tourism economy today is related to sport, and furthermore, that tourism development forecasts in the coming years also predict its further increase [Vehmas 2010, pp. 121-127].

The twenty-first century began with the third generation of city marketing with an environment characterized by rapid political, technological and economic change [Wilson 2006, pp. 57-60]. Cities become responsible for their economic development by marketing a sporting event [Dos Santos 2014, p. 17]. The popularity of sporting events among fans and athletes has led them to play a leading role in the promotion of cities, countries and tourist regions.

A growing number of post-industrial European cities (e.g. Birmingham, Manchester or Sheffield) are utilizing sport initiatives to present an attractive image to potential tourists [Smith 2005]. Research on the image of places (and place marketing) has been carried out since the 1970s by representatives of various disciplines. However, the problem of the formation of a city or regional image still remains, above all, in the interest of economists and sociologists. Cities and regions all over the world today have to cope with the effects of developing globalization trends. The contemporary world confronts cities with the challenges of economic, cultural and social change [Robinson 2002, pp. 538-545]. One such challenge is the competition between places that appear on different levels and fields of activity. This rivalry refers to resources, investment, the number of tourists, new residents, or the right to organize important cultural and sporting events. Contemporary cities and regions compete for the desired opinions and social feelings, for example, the right image. A recognizable positive image is increasingly the main value of a place, which determines its competitive advantage on the market territory. Promoting cities is about creating a positive image – showing the location, economic, sporting and cultural values of a place [Avraham 2004, pp. 471-474].

The first foreign language definition of “image” appeared in 1974. Its author – A.R. Oxenfeldt characterized it as follows: “an image is a set of ideas that arises

from the evaluation of attributes that may contain cognitive and affective elements” [Oxenfeldt 1974]<sup>1</sup>. Positive reception of a city in the inner and outer environment determines the popularity of a place as a destination for travel, residence, education or investment. International events taking place in a particular place help to promote it, discover it first for the spectator of an event, and further, for potential tourists and investors – those who during the stay or through the broadcasts can get to know them better. Events can contribute to the creation or total change of the image of a place, a country or an entire nation. Improving the image with the participation of events takes place through: promoting the city in the media with emphasis on good organization and a friendly atmosphere; friendly hospitality for the participants in the form of prepared hotels, catering, transportation, security; providing various additional attractions for participants, such as cultural events; a guaranteed high level of the event. Sporting events, potentially providing economic, political, tourist, social and cultural benefits, have a special place in the marketing of cities. For this reason, cities and regions strongly compete for the organization of important sporting events. Cities then gain media publicity and promote the place. In addition, attractive events and positive experiences are building “*destination loyalty*”. Some of them become excellent ambassadors of the host city [Baker, Crompton 2000; Oom do Valle 2006]. Experience has shown that increasing the recognition and prestige of the host country in the world is the greatest added value to the organization of a big sporting event. Many researchers are interested in the impact of sporting events on city image – e.g. Liu & Gratton investigated the impact of the Shanghai Grand Prix on the image of a host city [Liu, Gratton 2010].

Barcelona used the 1992 Olympic Games to promote the region of Catalonia. Due to the organization of the Olympic Games in Barcelona, the positive impact of this event on the development of tourism in the city and its image has been noted. Thanks to good organization and great promotion, the capital of Catalonia has become recognizable all over the world. And although the Spaniards ended with a deficit, in the long run, the city gained. This phenomenon was so expressive that it was called the “Barcelona effect”. Also, Turin was promoted through the Games as a tourist destination. The event enabled presentation of the rich history and culture of the region. One year after the Games ended, the number of tourists increased by 150,000. Turin was then in fourth place among the most visited Italian cities, just behind Rome, Florence and Venice. As a result of the London 2012 Games, the United Kingdom sought to improve its image as a creative, nice place to live, visit and engage in business. To this end, once the Games were over, a hundred more sporting events were

<sup>1</sup> Soon other similar definitions of image appeared. Their authors were: Tuan (1975), Lawson & Bond-Bovy (1977), Crompton (1979), Fridgen (1987), Kotler & Barich (1991).

organized there to sustain the media's interest in this region [Chalip 2002]. However, there are Olympic centres that have failed to preserve the position of the tourist city. Moreover, \$50 billion has been spent on reshaping Sochi for the Winter Olympics, in the process bringing a traffic gridlock, a decline in environmental destruction and tourism [Müller 2014, p. 630]. Eight months after the closing ceremony, many commercial premises were abandoned. Others went bankrupt or found themselves on the verge of bankruptcy. Less than a year after the end of the Games, the newly built block, located on the outskirts of Russia, resembled a ghost town. Nobody uses the infrastructure built in the suburbs of Sochi. Some of the buildings have not even been finished, others have become animal shelters. It is said that the only salvation for Sochi is to open casinos and create a second Las Vegas. But despite all the imperfections, the Olympics have become a catalyst for winning other significant cultural and sporting events for Sochi, including the seven-year series of the Formula 1 Grand Prix and the 2018 World Cup Championships [Igel 2017]. When the attention of the whole world is turned to a sporting event, then the awareness of the place in which it takes place increases.

Contemporary sporting events are an important part of the tourist product of cities. For many tourists, participation is the main motive for visiting a particular place. Others treat them as additional attractions, enriching the tourism offer of the agglomeration. Thanks to them, the cities stand out from the competition by developing their competitive advantage and their authorities create an image of an interesting place to visit. M. Taks indicates that generally two types of tourism should be distinguished: flow-on (i.e. at the time of the events; tourism activities beyond the event but around the time of the event) and future tourism [Taks 2009, Taks 2017]. The claim that sporting events bring financial benefits is almost a truism today [Whitson, Macintosh 1996, pp. 278-295]. Sports events have direct and indirect impact on the development of tourism [Weed 2009, p. 622; Tomlinson, Young 2006; Chalip 2002, p. 195; Carvalhedo 2002, p. 220]. Sporting events develop tourism, tourists leave large sums of money during their stay, they also indirectly inhibit the development of unemployment, and through numerous advertisements, they can improve the image of the tourist destination [Weed 2008, p. 1; Chalip, Green 2003, p. 214; Kaplanidou, Vogt 2007, p. 201].

Contemporary cities and regions raise their statuses and improve their images not only through mega sport events. Such a function is also performed by hosting events strictly connected with the sport cultural heritage of a given region. Despite most events being closely related to a certain city or a place – e.g. the Rolland-Garros tennis hall in Paris – and constituting a part of this place's heritage, academic literature rarely joins the concepts of sport events and heritage. A sport event related to cultural heritage may be defined as an event, usually of a single sport discipline, which

takes place at a given location that has been hosted for many years since the location's origin. J.L. Chappelet calls this type of event a 'Heritage Sport Event' (HSE) [Chappelet 2015].

Examples of HSEs are: Palio di Siena (famous horse races in Siena, Italy), Australian Open (Melbourne), Japanese Hatsu Basho (sumo, Tokio), Internationaux de France Roland-Garros (Paris), Sydney-Hobart Yacht Race (Sydney-Hobart), Swiss Open (tennis, Switzerland), Mostar Bridge Diving Competition (in the city of Mostar), Tour de Pologne (awarded by the Polish Touristic Organization) or Turkish Kirkpinar (male wrestling in oil in the town of Edirne). It could be added that the aforementioned locations do not need to apply to the authorities to host the events, which means they do not compete with other regions as do the Olympics' candidate hosts.

## Material and methods

Data was collected during the European Junior Swimming Championships held in July 2013 in Poznan, Poland. A sample of 210 swimmers completed the questionnaire during two last days of the 7-day competition. The sample was selected in such a way as to ensure proper representation of the obtained results. Simple random sampling, which is a draw without return, was used. Information on the expected number of participants was used to determine the sample size. Calculations were used for the sample size, for the finite population. It was assumed that the maximum error of estimation ( $e$ ) at a 95% confidence level did not exceed 4%.

The study was conducted via diagnostic survey, a standardized interview technique and an interview questionnaire. The questions were closed-ended. Some of the questions used the Likert scale. The selection of respondents was random. The empirical study took place during the swimming competition.

## The socio-demographic profile of participants of the European Junior Swimming Championships in Poland – the characteristics of the sample test

65.7% of the respondents were men and 34.3% – women. 77.6% of the respondents were younger than 18 and 22.4% – were older. 57.1% of the respondents had completed primary education and 42.9% – secondary. 15.2% of respondents were from Poland, and 84.8% were foreign athletes (foreign sport tourists).

From Germany to Poland came 7.1% of the respondents, from Italy – 6.7%, from Spain – 5.7%, from Serbia – 5.2%, from Sweden – 5.2%, from Czech Republic – 5.2%, from Ukraine – 4.8%, from Romania – 4.3%, from Belarus – 3.3%, from France – 3.3%, from Esto-

nia – 2.9%, from Russia – 2.9%, from Austria – 2.9%, from Turkey – 2.9%, from Netherlands – 2.9%, from Belgium – 2.4%, from Finland – 2.4%, from Norway – 2.4%, from Croatia – 1.9%, from Hungary – 1.9%, from Switzerland – 1.9%, from Denmark – 1.4%, from Luxembourg – 1.4%, from Bulgaria – 1%, from Andorra – 0.5%, from Portugal – 0.5%, from Lithuania – 0.5%, from Latvia – 0.5% and from Slovakia – also 0.5%. 15.7% of the respondents were Polish.

42.9% of respondents had a long distance to the host city – more than 1,000 km, 38.6% – 501-1,000 km, 11.9% – 301-500 km and 6.7% – 101-300 km. 38.1% of the respondents lived in cities more numerous than 500,000 inhabitants, 25.2% – city of 100,000-500,000 inhabitants, 16.2% – city 10,000-100,000, 9.5% – less than 10,000 and 11% – lived in villages.

## Findings and conclusions

**Tab. 1.** “How many have you participated in the swimming competition held in Poznan?”

	%
First time	74.8
Second time	14.8
Third time and more	10.5

Source: own elaboration

Almost 75% of swimmers had the opportunity to participate in competition held in Poznan for the first time. Almost 15% of athletes had this opportunity for the second time and more than 10% had this opportunity for the third time or more.

**Tab. 2.** “Did you come to Poznan with your fans (family members, friends etc., excluding coach, team etc.)?”

Yes (%)	No (%)
49,0	51,0

Source: own elaboration

Almost half of the swimmers (49%) came to Poznan with fans – family members, friends etc.

**Tab. 3.** “How many fans came to Poznan with you?”

	%
I came alone	51
1 person	26.2
2-4 persons	16.2
5-10 persons	3.3
More than 10 persons	3.3

Source: own elaboration

26.2% of athletes came to Poznan with one fan, 16.2% – 2-4 fans, 3.3% – 5-10 fans and 3.3% – more than 10 fans. This is quite a good result from a touristic and an economical point of view because fans also behave like regular tourists in the city.

**Tab. 4.** “What is your opinion on the organizational level of the European Junior Swimming Championships held in Poznan?”

Scale: 1-very unprofessional, 10-very professional

	%
1	0.0
2	0.0
3	0.0
4	2.4
5	2.9
6	9.5
7	16.2
8	27.6
9	27.1
10	14.3

Average rating: 8.0.

Source: own elaboration

The athletes rated the organizational level of competition at a quite high average level of 8.0 points.

**Tab. 5.** “How many days are you going to spend in Poznan?”

	%
3 days	4.8
4 days	35.7
5 days and more	59.5

Source: own elaboration

More than half of the athletes (59.5%) spent 5 days or more in Poznan. This is also important from a touristic and an economical point of view.

**Tab. 6.** “Where did you stay?”

	%
Hotel (*/**/****)	58.1
Hotel (****/*****)	13.8
Guesthouse	17.6
Other place	10.5

Source: own elaboration

More than half of the athletes (58.1%) stayed at a hotel \*/\*\*/\*\*; 17.6% – in a guesthouse, 13.8% – at a hotel \*\*\*\*/\*\*\*\*\*, and 10,5% – at other places (such as camp site).

**Tab. 7.** “Did you do any tourist activities (sightseeing, visiting a restaurant, shopping, visiting a recreational centre, visiting a cultural institution or participating in a cultural event) during your stay in Poznan?”

Yes (%)	No (%)
71.4	28.6

Source: own elaboration

More than 70% of athletes acted like a “normal” tourists during the sporting event.

– If “no” – why? – “I did not have time because I had to concentrate on the competition” (18 persons), “I prefer to watch competitions and my friends and rivals” (1 person), “I was too tired” (1 person);

– If “yes” – what type of the tourist activity was it? (150 persons answered): More than 70% of respondents chose city sightseeing (70.7%), more than 50% – shopping (52.7%), 16% went to a restaurant, 15.3% went to a sporting and recreational venue (like a golf course), 1.3% chose to visit a museum, nobody chose cultural events. 1.3% chose a different type of tourist activity in the city. This research shows that the European Junior Swimming Championships in Poznan were the stimulator for developing not only sport tourism but also another types of tourism (like cultural tourism – sightseeing, visiting museums, etc.).

**Tab. 8.** “What is, in your opinion, the impact of the European Junior Swimming Championships on the image of the city of Poznan?”

	%
Positive impact	64
It has no impact	12.5
Negative impact	2.5
I do not know	21.0

Source: own elaboration

64% of athletes claimed that this sporting event has positive impact on the image of the city of Poznan. 12.5% of respondents did not observe such connections and only 2.5% claimed that the impact is negative. 21% claimed that they do not have an opinion.

Most athletes, however, decided that the organization of the event in Poznan means benefits for the city – improving its image.

More than 70% of the respondents claimed that the impact of the analysed sporting event on city image is at a level of 10.0 points.

**Tab. 9.** “If the impact is in your opinion positive – what is its level?”

	%
1	0.0
2	0.0
3	0.0
4	0.0
5	0.0
6	0.0
7	5.0
8	7.0
9	17.0
10	71.0

Source: own elaboration

**Tab. 10.** “Did the organizational committee of the event prepare any tourist or cultural attractions for participants of the competition?”

Yes (%)	No (%)
24.8	75.2

Source: own elaboration

One quarter of respondents considered banquets as such attraction, but it was prepared mainly for coaches. The athletes during the competition must, of course, focus primarily on the start, but additional elements of the programme would certainly allow the competitors to stay in Poznan, and above all, they could “keep” the players and trainers in the city longer (similarly to the cultural programmes at scientific conferences). If they

**Tab. 11.** “Is Poznan an attractive city for people interested in sport?”

Scale: 1-very unattractive, 10-very attractive

	%
1	0.0
2	0.0
3	0.0
4	1.0
5	3.3
6	12.9
7	16.7
8	34.8
9	19.0
10	12.4

Average rating: 7.9. Source: own elaboration

were able to “keep” the participants for a longer period of time, they could arrange, for example, guided city tours or guided group tours for them around the Great Poland region.

The swimmers rated the attractiveness of the city of Poznan for people interested in sport on an average, at 7.9 points on a 10-degree scale of attractiveness.

**Tab. 12.** “Are you satisfied with your participation in the swimming event held in Poznan?”

Scale: 1-very dissatisfied, 10-very satisfied

	%
1	0.0
2	0.0
3	0.5
4	0.0
5	4.3
6	2.4
7	11.0
8	11.0
9	35.2
10	35.7

Average rating: 8,8. Source: own elaboration

The swimmers rated satisfaction from participation in the event in Poznan at an average of 8.8 points on a 10-degree scale of satisfaction.

**Tab. 13.** “Would you like to come back to Poznan one day for sports or tourist motivations?”

Yes (%)	No (%)
82.8	17.8

Source: own elaboration

More than 80% of respondents would like to come back to Poznan for sports or tourist motivations in the future.

## Discussion

More than 60% of the respondents claimed that European Junior Swimming Championships has positive impact on image of the city of Poznan. And more than 70% of them claimed that the impact of analysed sporting event on city image is at the level of 10.0 points (on the Likert scale). More than 70% of the swimmers took part in tourist activity during their stay in Poznan. This was usually city sightseeing (70.7%). Swimmers were satisfied with participation in the event

held in Poznan – the average rating on Likert scale – 8.8 points, and they claimed (82.8%) that they would like to come back to Poznan for sports or tourist motivations in the future.

The survey also provides information on the use of the city’s tourist base by the swimmers. It additionally indicates some niches to be developed – as well as the possibility of extending the cultural offer of this sporting event and increasing the tourist offer for its participants. The athletes during the competition must, of course, focus primarily on the start, but additional elements of the programme would certainly allow the then to stay in Poznan, and above all, they could “keep” the swimmers and trainers in the city longer (similarly to the cultural programmes at scientific conferences). If they were able to “keep” the participants for a longer time, they could arrange, for example, guided city tours or guided group tours for them around the Great region of Poland.

## References

- Avraham E. (2004), *Media strategies for improving an unfavorable city image*, „Cities”, vol. 21, issue 6.
- Baker D. A., Crompton J. L. (2000), *Quality, satisfaction and behavioral intentions*, „Annals of Tourism Research”, 27 (3).
- Carvalho A. (2002), *Tourism as Cultural Legacy of the Modern Olympic Games*, in: *The Legacy of the Olympic Games 1984-2000 – International Symposium Lausanne 2002*, Lausanne-Switzerland.
- Chalip L., (2002), *Tourism and the Olympic Games*, [in:] *The Legacy of the Olympic Games 1984-2000 – International Symposium Lausanne 2002*, Lausanne-Switzerland.
- Chalip L., Green B. (2003), *Effects of Sport Event Media on Destination Image and Intention to Visit*, „Journal of Sport Management”, 17/2003.
- Chappelet J.L. (2015), *Heritage sporting events and place marketing*, Paper for the conference on Sustainable Development for Sport Tourism Portorož, materials from prof. J.L. Chappelet from the University in Lausanne.
- Dos Santos M. A. (2014), *Strategies in Sports Marketing*, Business Science Reference.
- Igel L. (2017), *After IOC bans Russia from Winter Olympics, FIFA has to decide about World Cup*, „Forbes”, 6-12.
- Kaplanidou K., Vogt Ch. (2007), *The Interrelationship between Sport Event and Destination Image and Sport Tourists’ Behaviours*, „Journal of Sport & Tourism”, 12/3.
- Kim J., Kang J., Kim Y. (2014), *Impact of Mega Sport Events on Destination Image and Country Image*, „Sport Marketing Quarterly”, 23, (3).
- Liu D., Gratton Ch. (2010), *The Impact of Mega Sporting Events of Live Spectators’ Images of A Host City: A Case Study of the Shanghai F1 Grand Prix*, „Tourism Economics”, 16, (3).
- Müller M. (2014), *After Sochi 2014: costs and impacts of Russia’s Olympic Games*, „Eurasian Geography and Economics”, vol. 55.
- Oom do Valle P., Albino Silva J., Mendes J., Guerreiro M. (2006), *Tourist Satisfaction and Destination Loyalty Intention*:

- A Structural and Categorical Analysis*, „International Journal of Business Science and Applied Management”, 1 (1).
- Oxenfeldt A.R. (1974), *Developing a Favorable Price-Quality Image*, „Journal of Retailing”, 50 (4).
- Robinson J. (2002), *Global and World Cities: A View from off the Map*, „International Journal of Urban and Regional Research”, vol. 26.3.
- Smith A. (2005), *Reimagining the City – The Value of Sport Initiatives*, „Annals of Tourism Research”, 32, (1).
- Taks M. (2009), *Factors Affecting Repeat Visitation and Flow-on Tourism as Sources of Event Strategy Sustainability*, „Journal of Sport & Tourism”, 14/2-3.
- Taks M. (2017), *Governance in Sport and the Olympic Movement: The future of mega-sport events*, Ancient Olympia-Greece, International Olympic Academy – 12<sup>th</sup> International Session for Educators of Higher Institutes of Physical Education.
- Tomlinson A., Young Ch. (2006), *National Identity and Global Sports Events*, SUNY Series on Sport, Culture and Social Relations.
- Weed M. (2008), *Sport Tourism Experience*, „Journal of Sport & Tourism”, 13/1.
- Weed M. (2009), *Progress in sports tourism research? A meta-review and exploration of futures*, „Tourism Management”, 30/2009.
- Whitson D., Macintosh D. (1996), *The global circus: International sport, tourism, and the marketing of cities*, „Journal of Sport & Social Issues”, 3/1996.
- Wilson R. (2006), *The economic impact of local sport events: significant, limited or otherwise? A case study of four swimming events*, „Managing Leisure”, no. 11.
- Vehmas H. (2010), *Rationale of active leisure: Understanding sport, tourism and leisure choices in the Finnish society*, „Ido Movement for Culture”, 10/2010.





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