



**Physical Activity and Health**  
in Interdisciplinary Approach  
24 May 2019 Czestochowa, Poland

# BOOK OF ABSTRACTS

Editors

Jacek Wąsik, Dorota Ortenburger

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### SCIENTIFIC COMMITTEE

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Chairmen - prof. JDU Jacek Wąsik, Jan Dlugosz University in Czestochowa, Poland

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PhD. Agata Horbacz, Pavol Jozef Safarik University in Kosice, Slovakia

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M.Sc. Tomasz Góra, Jan Dlugosz University in Czestochowa, Poland

M.Sc. Dariusz Mosler, Jan Dlugosz University in Czestochowa, Poland





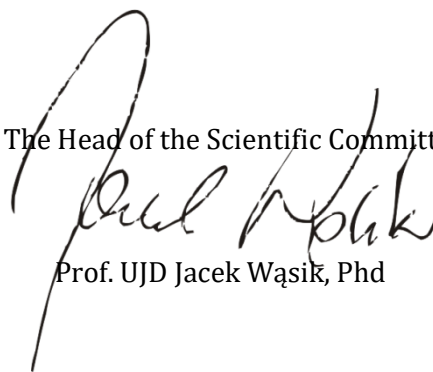
## DEAR COLLEAGUES AND FRIENDS

On behalf of the Science and Organisation Committee would like to very thank all the Participants for sending us abstracts and for your readiness to take an active part in the IV International Science Conference for Students and Doctorate Students “Physical Activity and Health in the interdisciplinary approach”. It is my pleasure to invite all of the experienced academicians and young researchers.

I am proud that we have managed to gather Authors from 7 countries (Korea, Italy, Sweden, Czech Republic, Slovakia, Ukraine and Poland). The Conference creates space for communication and exchange of experience within the meaning of the sciences about physical education and health in the interdisciplinary approach. This event is aimed at integration of many data obtained by means of new and advanced study, measuring tools and techniques and common interpretation.

As an Organiser, I would like the conference to become the platform to raise discussion and creating common research plans. It is my great pleasure to welcome you to Physical Activity and Health in Interdisciplinary Approach IV International Scientific Conferences of Students and PhD Students - 24 May 2019 Czestochowa, Poland,

The Head of the Scientific Committee



Prof. UJD Jacek Wąsik, Phd



## PROGRAM

**Jan Dlugosz University in Czestochowa, 2/4 Zbierskiego street**

10.00 – 10.30 OPEN CEREMONY AND PLENARY SESSION - HALL 1.05

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### **THE PHENOMENON OF REACTION TIME IN SPORT**

Stefan Balko

10.30 – 10.45 COFFEE BREAK

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10.45 – 12.15 SESSION I - HALL 1.05

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Chairmen: Janusz Szopa, Jacek Wąsik

### **DANCE AS AN ATTRACTIVE FORM OF PHYSICAL ACTIVITY IN THE OPINION OF SCHOOL CHILDREN TRAINING IN SCORPION DANCE TEAM**

Anna Hadamik

### **POZIOM REGULACJI NASTROJU U PRAKTYKUJĄCYCH HATHA JOGĘ NA TLE OSÓB NIE UPRAWIAJĄCYCH TEJ AKTYWNOŚCI RUCHOWEJ**

Agnieszka Kmieciak

### **PREFERRED FORMS OF SCHOOL AND EXTRACURRICULAR PHYSICAL ACTIVITY FOR CHILDREN AGED 10-15 AND FREQUENCY OF TAKING THEM UP**

Aleksandra Kąkol

### **VOLLEYBALL AS A FORM OF PHYSICAL RECREATION**

Aleksandra Kałuża

### **ANALYSIS OF THE ASSOCIATIONS BETWEEN BALANCE, LATERALITY, MUSCULAR DYSBALANCES, AND PERFORMANCE IN ALPINE SKIING DISCIPLINES IN YOUTH AND JUNIOR CATEGORIES**

Ivana Turkova, Martin Nosek

### **ANKYLOSING SPONDYLITIS & DAHN TAEKWONDO SPONDYLITIS IMPROVEMENT PROGRAM: A CASE STUDY**

Sungwook Jung, Jusik Park, John Arthur Johnson

10.45 – 12.15 SESSION II - HALL 1.12

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Chairmen: Eligiusz Małolepszy, Cezary Kuśnierz

### **SELECTED CONDITIONS FOR PRACTICING GYMNASTICS. A HEALTHY SPINE FOR MATURE WOMEN**

Natalia Skrzydeł

**CALORIFIC EXPENDITURE OF WOMEN OF ALL AGES CULTIVATING ZUMA**

Paulina Kochman

**CHILDREN'S MOTIVATION TO PARTICIPATE IN SWIMMING TRAINING ACCORDING TO  
CONTESTANS OF CHOSEN CLUBS**

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**SPORTS AND MARTIAL ARTS IN STUDENT'S FACULTY OF PHYSICAL EDUCATION AND  
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**WPŁYW BRAKU CZYNNIKÓW REGENERACJI NA SPRAWNOŚĆ FIZYCZNĄ ORGANIZMU**

Jakub Kacprzak

**PHYSICAL ACTIVITY OF GYMNASIUM YOUTH AND ITS SELECTED DETERMINANTS**

Iryna Romanchuk

**CALORIFIC EXPENDITURE OF PEOPLE PRACTICING A MODERN DANCE RECREATIONALLY**

Jessica Dziuk

12.15 – 12.30 COFFEE BREAK

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12.30 – 14.00 SESSION III - HALL 1.05

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Chairmen: Stefan Balko, Bożena Królikowska

**IMPACT OF THE INDIVIDUAL DISCIPLINES IN NORSEMAN XTREME TRIATHLON  
ACCORDING TO THE PERFORMANCE LEVEL**

Natália Kováčová, Monika Czaková

**TACTICAL ANALYSIS IN TERMS OF KINEMATIC PROPERTIES OF TAEKWON-DO FRONTAL  
AND ROUNDHOUSE KICK**

Dariusz Mosler, Tomasz Góra, Jacek Wąsik, Dorota Ortenburger

**ZDOLNOŚCI ADAPTACYJNE ORGANIZMU DO EKSTREMALNIE NISKICH I WYSOKICH  
TEMPERATUR**

Jakub Kacprzak

**WPŁYW KICK-BOXINGU NA RADZENIE SOBIE ZE STRESEM**

Sandra Paszek, Jakub Kacprzak

**EFFICIENCY OF THE ATTACKING TECHNICAL AND TACTICAL EFFECTS OF HIGHLY  
QUALIFIED BOXERS IN COMPETITIVE ACTIVITY**

Ivan Khomiak, Olha Zadorozhna

**THE INFLUENCE OF TRAINING IN THE VIRTUAL REALITY ON THE LEVEL OF REACTION  
TIME IN SPORT ACTIVE STUDENTS**

Tereza Vanova, Stefan Balko

**SPECIFIC RELIABILITY OF 10M ENDURANCE SHUTTLE SWIM TEST TO 400 M FREE STYLE TEST AT WATER POLO PLAYERS**

Stepan Hauzner, Jan Hnizdil, Martin Musalek

12.30 – 14.00 SESSION IV - HALL 1.12

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Chairmen: Iuliia Pavlova, Katarzyna Kasprowska

**DIFFERENTIATION OF TECHNICAL AND TACTICAL TRAINING OF EPEE FENCERS WITH THE ACCOUNT OF WEAPON CONTROL**

Serhiy Smirnovskyy, Neonila Neroda

**UNDERSTANDING HEALTH-RELATED QUALITY OF LIFE IN UKRAINIAN YOUNG CHILDREN: SIMILARITIES AND DIFFERENCES BETWEEN SELF-REPORTS AND PROXY-REPORTS**

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Anna Serweta, Błażej Cieślik, Joanna Szczepańska-Gieracha

**SPINE AND HIP FLEXIBILITY AND FOOT ANGLES IN PRE-PROFESSIONAL ADOLESCENT BALLET DANCERS.**

Sylwia Siadul, Patrycja Stępień, Kamil Pietraszewski, Seweryn Goundorov, Błażej Cieślik

**WALORY TURYSTYCZNE WYBRANYCH OBSZARÓW WYŻYNY KRAKOWSKO-WIELUŃSKIEJ**

Patrycja Golba, Sandra Kołaczkowska, Kinga Paweńczak, Katarzyna Kasprowska-Nowak

**OD TURYSTYKI ZDROWOTNEJ DO ARCHEOTURYSTYKI**

Daria Grzybowska, Patryk Brzozowski, Jerzy Rajtarowski, Katarzyna Kasprowska-Nowak

14.00 – 14.30 LUNCH

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14.30 – 15.15 SESSION V - HALL 1.12

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Chairmen: Jacek Wąsik, Dorota Ortenburger

**FUNCTIONAL TRAINING ON THE PHYSICAL STRENGTH FACTOR IN ELITE TAEKWONDO ATHLETES**

Jusik Park

**DAHN TAEKWONDO TRAINING EFFECTS ON JUVENILE SPINAL ASYMMETRY**

Man Gyu Choi, Jusik Park

**SELECTED PSYCHOLOGICAL ASPECTS OF URBAN AUDIOSPHERE**

Barbara Major, Joanna Matyja, Dorota Ortenburger, Jacek Wąsik, Tomasz Gora, Dariusz Mosler, Renata Spalek

**HEALTH BEHAVIORS AND WORK-RELATED MUSCULOSKELETAL DISORDERS AMONG  
PHYSIOTHERAPISTS AND NURSES**

Adrian Ryszczuk, Kamil Noga, Kamila Kwiatkowska, Anna Bednarek, Daria Banaszekwicz, Błażej Cieślík

**WORKSHOPS AND NARRATIVE INTERVIEWS AS A RESEARCH METHODOLOGY TO  
EXPLORE PERCEPTIONS OF OUT-OF-SCHOOL PHYSICAL ACTIVITY**

Renata Spalek, Karina Wyszomierska, Dorota Ortenburger

14.30 – 15.15 CLOSE CEREMONY

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# ABSTRACTS





# ANKYLOSING SPONDYLITIS & DAHN TAEKWONDO SPONDYLITIS IMPROVEMENT PROGRAM: A CASE STUDY

SUNGWOOK JUNG<sup>1</sup>, JUSIK PARK<sup>2</sup>, JOHN ARTHUR JOHNSON<sup>2</sup>

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<sup>1</sup>Dahn Taekwondo Institute, Seoul, Republic of Korea

<sup>2</sup>Department of Taekwondo, Keimyung University, Republic of Korea

**Introduction:** This case study applied the Dahn Taekwondo Spondylitis Improvement Program (DTSIP) to a 30-year-old male with ankylosing spondylitis five times a week for 28 weeks. **Materials and Methods:** A 32-year-old male with ankylosing spondylitis underwent the Dahn Taekwondo Spondylitis Improvement Program (DTSIP), an amalgamated program of standard Western medicine practices and complementary and alternative medicine (CAM) exercises based in the oriental medicine practices of yoga and taekwondo. The subject performed the DTSIP 5 times a week for 90 minutes for 28 weeks. **Results:** First, blood C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), and platelet levels decreased by approximately 29-71%. Second, blood leukocyte counts decreased by about 11%. Third, as a result of Bath Ankylosing Spondylitis Metrology Index (BASMI) measurement, tragus to wall (TWD), lumbar side flexion (LSF), LF (lumbar flexion), and intermalleolar distance (IMD) were improved substantially. The students' cervical vertebrae and thoracic and lumbar vertebrae ranges of motion were additionally improved. The range of motion of the shoulder and hip joint improved. **Conclusions:** Therefore, the DTSIP seems to have a positive effect on the inflammation, immune functions, and spine and joint range of motion in the subject of this case study. Future studies are required with a wider sample population to validate these results.

**Keywords:** complementary and alternative medicine (CAM), ankylosing spondylitis, C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), Bath Ankylosing Spondylitis Metrology Index (BASMI), Ki

# FUNCTIONAL TRAINING ON THE PHYSICAL STRENGTH FACTOR IN ELITE TAEKWONDO ATHLETES

JUSIK PARK

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Department of Taekwondo, Keimyung University, Republic of Korea

**Introduction:** The purpose of this study was to investigate the effect of a functional exercise program for 6 weeks (three times a week, 60 minutes / session) on eight elite Taekwondo players. **Materials and Methods:** The data were processed using SPSS/PC 18.0 program and the mean and standard deviation were calculated. The effect of functional exercise program was applied to the paired sample t-test. **Results:** Body composition items were weight ( $p < .001$ ), BMI ( $p < .001$ ). In addition, functional exercise program effect was back strength ( $P < .01$ ), sit-up ( $p < .01$ ), repeated jump ( $p < .01$ ), and side step ( $p < .01$ ) were found to be effective in basic physical fitness items. Furthermore, there was a statistically significant difference ( $p < .05$ ) in all the measurement items as a result of the Wingate test in the anaerobic exercise ability item before and after applying the functional exercise program. The maximal graded exercise test using a treadmill test showed a significant improvement ( $p < .05$ ) in maximum oxygen uptake ( $VO_{2max}$ ), exercise duration, and blood lactate concentration. **Conclusions:** The functional exercise program used in this study can be used as an appropriate program to improve the fitness factors required for Taekwondo training.

**Keywords:** Functional Training, Taekwondo, Physical Strength

## DAHN TAEKWONDO TRAINING EFFECTS ON JUVENILE SPINAL ASYMMETRY

MAN GYU CHOI, JUSIK PARK

Department of Taekwondo, Keimyung University, Republic of Korea

*Introduction:* The purpose of this study was to develop the Dahn Taekwondo Spinal Asymmetry Improvement Program (DT-SAIP). *Materials and Methods:* The subjects were 18 Taekwondo trainees aged 9 to 16 years with spinal asymmetry (Table 1). Subjects participated in the DT-SAIP for 1 hour per day for 12 weeks three times a week (36 times). The DT-SAIP contents are shown in Table 2 and Figures 1-3. Subjects' measures were taken with the Adam's forward-bending test, and a Cobb angle of  $>10^\circ$  was used to determine the minimum angulation for spinal asymmetry (i.e., Scoliosis). Data were subjected to a frequency analysis and paired sample t-test to examine the effect before and after the program. *Results:* Table 3 shows the changes in body composition and basic physical strength pre- and post-DT-SAIP. The Cobb's angle of the thoracic vertebrae was  $7.73 \pm 2.03$  in the pre-test and  $1.59 \pm 0.79$  after the participation in the program to appear statistical significant ( $p < .001$ ). Table 4 shows the changes in subjects' anaerobic exercise capacity pre- and post-test. *Discussion:* The thoracic Cobb's angle was reduced significantly ( $p < .001$ ) from  $7.73 \pm 2.03$  to  $1.59 \pm 0.79$ , and the lumbar Cobb's angle was reduced significantly from  $4.19 \pm 1.62$  to  $1.84 \pm 0.89$  ( $p < .001$ ). The Cobb's angle of the thoracic vertebra was reduced by  $6.14^\circ$  and the Cobb's angle of the lumbar vertebra was reduced by  $2.35^\circ$ . *Conclusion:* Although further testing is needed to confirm these results, the DT-SAIP can be considered as an effective treatment for juveniles with spinal asymmetry.

Keywords: Scoliosis, Cobb's degree, spine dissymmetry, Adam's forward-bending test

# ANALYSIS OF THE ASSOCIATIONS BETWEEN BALANCE, LATERALITY, MUSCULAR DYSBALANCES, AND PERFORMANCE IN ALPINE SKIING DISCIPLINES IN YOUTH AND JUNIOR CATEGORIES

IVANA TURKOVA, MARTIN NOSEK

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Department of Physical Education and Sport, Faculty of Education, Jan Evangelista Purkyně University in Usti nad Labem, Czech Republic

*Introduction:* The research is focused on analysis of the associations between important movement abilities and performance in alpine skiing in youth and junior categories. The aim of this investigation was to explore the association between balance, laterality, the condition of the muscular apparatus and their performance in alpine skiing disciplines among youth and junior categories. *Material and Methods:* The material and methods for our qualitative character research were chosen as follows: evaluation of associations in stable and dynamic balance situations on a power platform (Alfa stabilometric platform), analysis of muscular dysbalances (Romberg's test II and III), anthropometrics evaluation through In body 720 and Tanita MC-980 machines and laterality test through test battery T-116. Additionally, skiing results and training plans were evaluated. The values were analyzed by Student's t test and  $\omega^2$  ( $\omega^2 \geq 0.1$ ), Spearman's rank correlation coefficient (r) at the significance level  $p < 0,05$ . Twenty youth and junior alpine skiers participated in age 17.6 years old ( $\pm 2.3$  years) from the Czech Republic. All of the participants took a part in FIS alpine ski races in the 2018-2019 season. *Results:* The findings display a positive correlation relationship between balance and skiing results of the participants in FIS races ( $r=0.67$ ,  $p=0.004$ ). Analysis of muscular dysbalances revealed the negative effect on performance in alpine skiing ( $r=-0.74$ ,  $p=0.002$ ). *Conclusion:* The participants with better performance in alpine disciplines reached better results in either static or dynamic balance situations. Muscular dysbalances have a negative effect on performance in alpine skiing.

Keywords: balance, laterality, muscular dysbalances, physical performance, skiing

## SPECIFIC RELIABILITY OF 10M ENDURANCE SHUTTLE SWIM TEST TO 400 M FREE STYLE TEST AT WATER POLO PLAYERS

STEPAN HAUZNER<sup>1</sup>, JAN HNIZDIL<sup>2</sup>, MARTIN MUSALEK<sup>1</sup>

---

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*Aim:* The aim of this study is to approximate specific reliability of test for assessing endurance abilities at water polo players. *Material and Methods:* This work represents theoretical-empirical study. The main research method was the observation. In cross-sectional survey, testing was used as the basic method for data collection. A total of 15 participations were included in the study. The test set was created by the SK Ústí nad Labem water polo players in the age category 18 - 22 years. Average age was 18.47 years (sd = 1.20). The 10m shuttle swim test was used. We determined the degree of stability. Furthermore, a 400 m free swimming method was used to determine the degree of equivalence. Descriptive statistical methods to analyse the obtained data, Correlation coefficient, approximation of specific reliability, using the Bland-Altman graph to assess the normality. *Results:* Test-retest stability was determined  $r_s = 0.99$ . This result corresponds with the results of similar research as well as with the conclusions of our previous research, for the younger age group 10 - 15 years (stability 0.97). Equivalence to test 400 free swimming was determined  $r_e = 0.94$ . There is an evidence of the high degree of reliability of this test. *Conclusion:* High degree of content equivalence and stability of tests is a basic condition for using a new test in practice.

Keywords: reliability, shuttle swim test, water polo

## THE INFLUENCE OF TRAINING IN THE VIRTUAL REALITY ON THE LEVEL OF REACTION TIME IN SPORT ACTIVE STUDENTS

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*Aim:* The aim of this study is to verify whether specific training of reaction time in virtual reality can be beneficial in improving the level of this variable. *Material and Methods:* A total of 20 subjects (men,  $21 \pm 1.4$  years) participated in the research. The research group was divided into experimental (10) and control (10) groups. No specific virtual reality training was applied in the control group. In the experimental group, specific training of reaction time in virtual reality was used for 5 weeks. Training took place twice a week for 15 minutes. The participants in this group were supposed to hit flying objects (blocks) in the Beat Saber software, where the position of the blocks was variable according to the application generated protocol. The training was supported by music to increase the spectrum of perception (rhythm vs. visual stimulus). The speed of these objects was increased with each training session. The virtual reality environment was provided by HTC Vive system. Input (before the training) and output (after the five-week training) measurements of simple and choice reaction time on visual stimulus and audial reaction time were compared. *Results:* The results of our study show that the use of virtual reality for a five-week training of reaction time did not affect observed variables. There was no significant difference in the simple, choice and audial reaction times between the input and output measurements in the experimental group. No significant difference was found between the control group and the experimental group in the output measurements. *Conclusions:* Although the results did not show that five weeks of virtual reality training affected the reaction time, it can be noted that this device can be a suitable supplement in the training environment due to the variability of adjustable conditions. We also believe that it can be a suitable tool for ideomotor training in a number of sports disciplines.

Keywords: ideomotor training, sport performance, audial reaction time, visual reaction time

## EFFICIENCY OF THE ATTACKING TECHNICAL AND TACTICAL EFFECTS OF HIGHLY QUALIFIED BOXERS IN COMPETITIVE ACTIVITY

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*Background.* Competitive boxing activity has undergone numerous changes in recent years that are reflected in the calculation of the athletes' effective actions, in the number of judges who determine the winner and in boxing equipment. Frequent changes to the rules of the competition require a constant search of model indicators of competitive activity of athletes of high qualification for making adjustments to the training process of athletes. One of the main factors of effective competitive activity in sport in general and in boxing in particular is the attacking technical and tactical actions. In boxing technical actions and rational ways of their realization in the conditions of shortage of time and space, the ability to properly use the arsenal under the influence of the physical and mental pressure of the opponent is primary. Due to the peculiarities of competitive activity in boxing today, the analysis of attacking technical and tactical actions of highly skilled boxers is relevant. *Results and Conclusions.* In total, 100 athletes were analyzed in high level competitions (final and semi-final matches of the World Championship and Europe in 2017). Highly qualified boxers representing "light" categories in the competitive environment perform 235 attack tactical actions in the course of the entire duel, boxers of "average" weight categories - 236.5 beats per battle, boxers of "heavy" categories - 153.9 beats per duel. The effectiveness of attack tactical actions in boxers of lightweight categories is 17.1%, in the middleweight categories 16.2% and in difficult categories 15.1%. In comparison with previous years, the quantitative indicators of attack tactical and tactical actions increased in "light" categories for 86 beats per duel, in the "average" categories by 89.5 blows and in "difficult" categories by 42 blows for the duel. The effectiveness of assault tactical actions in 2017 compared with the previous years decreased by 28.4% among the "light" categories, by 33.1% in the "middle" categories and by 36.3% in heavyweight category boxers.

Keywords: attack actions, model indicators, efficiency, technical and tactical.

## IMPACT OF THE INDIVIDUAL DISCIPLINES IN NORSEMAN XTREME TRIATHLON ACCORDING TO THE PERFORMANCE LEVEL

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*Introduction:* The aim of this work was to analyze the partial shares of disciplines in ultra-distance triathlon Norseman Xtreme Triathlon according to divided levels of performance and to identify how they influence the overall performance. *Material and Methods:* We analyzed 529 performances reached in Norseman Xtreme Triathlon. Analyzed performances were divided to 5 categories according to sport performance time into 11 hours, 12 hours, 13hours, 14 hours and 15 hours. By the statistic evaluation we use the correlation and regression analysis to determine the relation between individual disciplines and their partial shares on the overall performance. *Results:* The results have shown that proportion of the disciplines in a group with the best performance are divided proportionally in the comparison with other groups with a lower performance where the only one discipline out of three has an important impact to the overall performance in the ultra-distance triathlon. In all groups running and cycling has been shown as statistically significant factors ( $p < 0.01$ ) and swimming has shown up as the non-significant factor influencing the overall performance ( $p > 0.05$ ). *Conclusion:* Obtained results have shown that ultra-distance triathletes with better performance are good in all three disciplines and their partial shares are divided proportionally. To improve the performance it is necessary to train mainly running and cycling, which are the most important in determining the overall performance, but it is important to not forget to train also swimming for the better preliminary placement in the overall race.

Keywords: ultra-distance triathlon, swim, bike, run, performance



# INFORMING PATIENTS OF CARDIOVASCULAR DISEASES IN THE SELECTED REGION ABOUT THE IMPORTANCE OF PHYSICAL ACTIVITY IN THE TREATMENT OF THEIR DISEASES

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This study focuses on the awareness of cardiovascular patients about the importance of physical activity in the treatment of their disease. In the theoretical analysis, three chapters deal with cardiovascular diseases and their prevention, physical activity and patient awareness of their health problem. The aim of the thesis is to extend the knowledge to the cardiovascular patients' awareness about the importance that physical activity can prevent and treatment to their disease on the basis of theoretical analysis and own research. We have developed 4 research questions to answer the goal of this study. The answers to these questions were addressed in the practical section, where we received answers from our respondents through questionnaires. In total, 103 patients participated in the research and 29 questions were asked. Based on the answers, we found that patients with cardiovascular diseases exercise regularly, but walks and housework are among their favorite. We also found that patients are satisfied with their awareness of their health problem and receive the most information from their doctor. Changes in their physical activity and eating habits were the two the main lifestyle changes taken from the results.

Keywords: disease, physical activity, information, patient

## COMPENSATORY EXERCISES IN THE PREPARATION OF EXTRALIGA VOLLEYBALL LEAGUE PLAYERS

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The point of this bachelor thesis is to extend knowledge of compensatory exercises in the preparation of Extraliga volleyball league players. Then to find out if compensatory exercises were placed to sports training. Objects of this thesis were players of volleyball team from Košice, Prešov and Svidník. The group consisted of 30 players in the average age of 25 years. We had questionnaire with 13 questions to reach data. We put the results of the questionnaire into the graphs and then evaluated them in percentage. From the results we learned that players are doing compensatory exercises. 100% of the players do stretching exercises and 97% of the players do fitness exercises. From the questionnaire we learned that 90% players feel pain in different parts of body which causes repetitive moves. Each team also includes regeneration, which is suitable for injury prevention. 80% extra league matches volleyball player takes part in the recovery once a week, and 13% info twice weekly.

Keywords: Compensatory exercises, training, volleyball, set up

# INFORMOVANOSŤ PACIENTOV VYBRANÝCH CIVILIZAČNÝCH OCHORENÍ O VÝZNAME POHYBOVEJ AKTIVITY PRI LIEČBE ICH OCHORENIA V REGIÓNE HORNÝ ZEMPLÍN

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Cieľom práce je na základe teoretického rozboru a vlastného výskumu rozšíriť poznatky o informovanosti pacientov civilizačných ochorení o význame pohybovej aktivity pri liečbe ich ochorenia v regióne Horný Zemplín. Výskumný súbor tvorilo 103 pacientov, z toho 49 mužov a 54 žien. Priemerný vek pacientov je 47,33 rokov (20-90r.). Pre zber dát sme použili neštandardizovaný dotazník, ktorý je súčasťou dotazníkovej batérie zostavenej pre potreby projektu Vega 1/0825/17 „Odporúčania pre pohybové aktivity rizikových skupín a ich plnenie na východnom Slovensku“ riešenej na UPJŠ v Košiciach. Dotazník bol zložený z 29 otázok a skladal sa z troch častí: informácie o zdravotnom stave pacienta, informovanosti PA a jeho vzťahu k pohybovej aktivite a základné informácie o životnom štýle. Po vyplnení dotazníka dostali naši respondenti informatívne letáky, v ktorých sa mohli dozvedieť o význame a benefitoch pravidelného športovania a zdravého stravovania. Získané údaje nám ukazujú, že 50% našich pacientov spĺňa odporúčania pre pohybovú aktivitu. Zároveň však najčastejšia pohybová aktivita (PA) pacientov zapojených do výskumu je práca v domácnosti (40%). Je otázne, či tento druh PA je dostatočný pri prevencii ochorení. Získané údaje nám ukazujú, že viac ako 50% respondentov sa pohybuje nepravidelne, čo môže viesť k hypokinéze a následne k vzniku rôznych ochorení. Nedostatok pohybu negatívne ovplyvňuje fungovanie organizmu a predstavuje pre zdravie človeka jeden z hlavných rizikových faktorov. Rovnako sme zistili, že väčšina našich pacientov (64%) je informovaná o PA, jej dôležitosti pri liečbe a prevencii ich zdravotného problému svojím lekárom. No nie každý pacient so svojím ošetrojúcim lekárom rozprával na tému dôležitosť PA (14%).

Kľúčové slova: Informovanosť, Pohybová aktivita, Civilizačné ochorenia

## OPINIONS PRIMARY SCHOOL STUDENTS OF THE HOCKEY CLASS TO TEACHING GYMNASTICS IN DISTRICT TOWNS OF THE EASTERN SLOVAK REGION

ŠTRAUCH RENÉ, DRAČKOVÁ DANA

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The aim of our subscription was to find out selected opinion of hockey class pupils on teaching gymnastics at four primary schools in Spišská Nová Ves, Košice, Stará Ľubovňa and Levoča. The research group consisted of 80 respondents from two primary schools with a special focus on ice hockey. The control group consisted of 356 boys from the Stará Ľubovňa and Levoča schools. These were pupils from the fifth and sixth grades of primary schools. Two types of questionnaires were used to determine the pupils' opinions. The first is part of VEGA 1/0798/18 "Innovative sports equipment for acquiring the gymnastic skills in pupils at elementary school". We created the second questionnaire self-help. Our results coincide with the authors, who in a long-term follow-up report very high popularity of physical education lessons. In the control and research group, the popularity of physical education lessons for primary school pupils is up to 88%.

Keywords: gymnastics, ice - hockey, students', selected opinion, State Educational Program (ISCED2)

## WORKSHOPS AND NARRATIVE INTERVIEWS AS A RESEARCH METHODOLOGY TO EXPLORE PERCEPTIONS OF OUT-OF-SCHOOL PHYSICAL ACTIVITY

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The Workshops as a qualitative approach to research can be increasingly used in the field of sports science because it reflects how reality is socially constructed. It is important for this multidisciplinary field of study. The workshops approach also allows researchers to rich descriptions on the experiance, thoughts, feelings in of out-of-school physical activity context. Exploring children's understanding of health and of out-of-school physical activity youth still is a special challenge for researchers. Our review of the existing literature on the subject revealed to us that little has been written about the workshop as an educational research approach in the physical culture although it is often used in students professional development programmes. This study discusses the possibility of including the workshop and narrative interviews as a qualitative research approach in the physical culture. Another reason why we think that the workshop can be considered as important qualitative research approach in physical culture is that it allows for the greater depth in analysis and multiple modes of data collection. It is very important because sport science is a very rich field of study examining the functioning of a healthy human body under the influence of exercise, training, and many other stimuli, and the ways of promoting health by means of physical activity. It is a multidisciplinary field of study, including such areas as physiology, psychology and others - involves both practical and theoretical knowledge.

Keywords: workshops, physical education,health promotion, qualitative approach to research

## DANCE AS AN ATTRACTIVE FORM OF PHYSICAL ACTIVITY IN THE OPINION OF SCHOOL CHILDREN TRAINING IN SCORPION DANCE TEAM

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*Introduction:* Dance is defined as a form of art consisting of proper collation of the following body movements, rhythmically connected with the accompanying music. For a lot of people, this form of physical activity is not just a combination of steps and gestures performed in musical rhythm, it is also a nice form of spending free time. Dance is also the art of showing experiences and emotions through the movement. Participation in dance class benefits our organism – it positively influences our physical condition, improves flexibility, strength, stamina and agility. It shapes our figure, improves our mood and it is available for almost everyone, regardless of the age. The aim of this study is to learn the opinion of people who dance on the advantages of taking up this form of activity. *Materials and methods:* The research was performed in Opole, it included school children at age 10-19, training modern dance in Scorpion Dance Team. 60 girls took part in the research. Diagnostic poll method, survey technique was used. Questionnaire of the survey, consisting of 15 questions was the research tool. *Results:* On the grounds of obtained results it may be alleged that the main motivation to take up dance trainings are: gain of dancing skills, improvement of physical function, positive aspects of health and esthetic regards about proper figure. Beneficial influence of PE on developing motivation to dance training was also ascertained. Respondents said that gymnastics class was a physical background to this discipline. Among various dance styles respondents preferred disco dance, street dance and hip hop. Dance is perceived as a passion and a way to spend free time among peers. *Conclusions:* Participation in dance classes is mostly self-motivated. The main value for people practising dance is physical and mental health, which is defined as wellbeing and increase of self-confidence.

Keywords: dance, physical activity, movement interests

## PREFERRED FORMS OF SCHOOL AND EXTRACURRICULAR PHYSICAL ACTIVITY FOR CHILDREN AGED 10-15 AND FREQUENCY OF TAKING THEM UP

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*Introduction.* Physical activity is an inseparable aspect of human life, resulting from the innate needs of the body and acquired skills. Properly selected (individualised) physical activity results in the harmonious development of the body, keeping and improving health. Lack of physical activity causes disorders in psychophysical development of children and young. Physical education in the educational assumptions, has an introductory function for students to broadly understood physical culture, teaches pro-health attitudes, improves motor skills, and increases the knowledge of various forms of physical activities (sport). The aim of the research is to determine forms of students physical activities in class and in free time. Material and methods. The research was made at Primary School No. 16 in Gdynia. The research was made on the group of children between 10 and 15 years old. The methods were diagnostic survey and questionnaire technique. Respondents answered on 15 questions. *Results.* On the basis of the obtained results, can be stated that team games are the most lessons attractive form, which is a significant motivational factor for systematic participation in classes. The dominant ones are: two fire games, football, floorball and basketball. The students spend their free time passively, mostly playing computer games and listening to music. A small group of students is physically active. Cycling, rollerblading and running are the most popular physical activities after classes. Except compulsory school activities, respondents declare physical activity three times a week, with average time about 60 minutes. *Conclusions.* Tested students have a positive attitude towards physical education classes, which is manifested in their willingness to participate in classes even if they are not obligatory. After-school physical activity is not declared by most of the students, explains it by lack of time and reluctance to work.

Keywords: physical activity, health, free time

## APPLICATION OF VIRTUAL REALITY IN HEALTH-ORIENTED PROGRAMS DESIGNED FOR OLDER PEOPLE WHO REGULARLY ENGAGE IN PHYSICAL ACTIVITY

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*Introduction:* The scientific literature confirms that physical exercise has a beneficial effect on mental condition in people undertaking various forms of exercise. There are other solutions sought for elderly people who are physically active but who experience depressive symptoms. One of them is the innovative psychotherapeutic program VR Tier One, which is designed to support basic pro-health activities. *Material and research methods:* The pilot study involved 9 women between 62 and 74 years of age. The average age of the study group is  $68 \pm 5.7$  years. Women are participants of the "Depression in Oppression" program carried out in the Foundation for the Activation of Seniors Siwy Dym in Wrocław. The criterion for inclusion was a minimum of four months of participation in the training program, as well as mood disorders and depressive symptoms. Each of the participants had 10 sessions, during which stayed in a virtual world created on the model of a garden with numerous symbolic therapeutic motifs. Depression was assessed using the 30 points Geriatric Depression Scale (GDS) and the Feeling Stress Questionnaire (KPS) by Mieczysław Płopa. Persons with GDS score  $> 10$  points were included in the study. *Results and conclusions:* The results obtained from the pre-session, post-session and post-session studies as well as from the 2 weeks after the end of the study are statistically significant. The VR Tier One program seems to be a promising, innovative tool that can positively influence the mental condition of older people with depressive symptoms, who despite the physical activity and pro-health education did not show any improvement in their mood and mood or stress reduction. However, it is necessary to continue research on a larger group.

**Keywords:** virtual reality, elderly people, depression, physical activity, stress



## ZDOLNOŚCI ADAPTACYJNE ORGANIZMU DO EKSTREMALNIE NISKICH I WYSOKICH TEMPERATUR

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*Wstęp:* Ekstremalnie niskie i wysokie temperatury to czynnik mający wpływ na wiele zmiennych fizjologicznych organizmu. Celem pracy jest zbadanie zmian zachodzących w organizmie młodego mężczyzny po dwóch miesięcznych okresach poddawania go działaniu skrajnych temperatur, w postaci kąpeli zimowych w lodowatej wodzie oraz sesjom korzystania z sauny, a także porównaniu długości okresów adaptacji organizmu badanego do powyższych warunków. *Materiał i metody:* Obiektem badanym był mężczyzna (25 l.) biorący udział w eksperymencie, w ramach którego w okresie od 3.01.2019 r. do 27.01.2019 r. regularnie co 2-3 dni zażywał zimowych kąpeli w naturalnych zbiornikach wodnych oraz w okresie od 2.03.2019 r. do 26.03.2019 r. regularnie co 2-3 dni korzystał z sauny. W tym czasie u badanego monitorowane były następujące parametry: ciśnienie skurczowe i rozkurczowe krwi, saturacja krwi i częstotliwość akcji serca. Pomiarów dokonywano przy pomocy holtera ciśnieniowego trzykrotnie w ciągu dnia: po przebudzeniu, po zakończeniu sesji morsowania/sauny i tuż przed nocnym spoczynkiem. Wyniki badań przeanalizowano i opracowano. *Wyniki:* Wraz z kolejnymi kąpielami w lodowatej wodzie u badanego spadało ciśnienie skurczowe i rozkurczowe krwi, nieznacznie zmniejszały się też częstotliwość akcji serca i saturacja krwi. Natomiast wraz z kolejnymi wizytami w saunie badanego spadało ciśnienie skurczowe krwi i częstotliwość akcji serca, zaś saturacja krwi nieznacznie się podnosiła. Ciśnienie rozkurczowe krwi nie wykazało znaczących zmian. Powyższe zmiany dało się zaobserwować jedynie podczas badań tuż po zakończeniu sesji morsowania/sauny – w trakcie trwania eksperymentu nie odnotowano znacznego wpływu ekstremalnych temperatur na wartości spoczynkowe badanych cech fizjologicznych. *Wnioski:* Cykliczne poddawanie organizmu działaniu ekstremalnych temperatur co prawda oddziałuje na jego wybrane zmienne fizjologiczne, lecz zmiany te nie są drastyczne. Jednakże po analizie wyników pomiarów można stwierdzić, że organizm badanego łatwiej zaadaptował się do warunków ekstremalnego zimna, niż ekstremalnego gorąca. Na wyniki badania mogła też wpływać niemożliwość przeprowadzania pomiarów w warunkach klinicznych.

## WPŁYW BRAKU CZYNNIKÓW REGENERACJI NA SPRAWNOŚĆ FIZYCZNĄ ORGANIZMU

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*Wstęp:* W zachowaniu optymalnego poziomu sprawności fizycznej organizmu kluczowe są 2 elementy składowe regeneracji: pożywienie i woda oraz sen. Celem pracy jest zbadanie spadku sprawności fizycznej organizmu młodego mężczyzny po wyłączeniu czynników regeneracji – kolejno pożywienia i wody, następnie (po okresie powrotu do optymalnej formy fizycznej) snu.

*Materiał i metody:* Obiektem badanym był mężczyzna (25 l.) biorący udział w eksperymencie, w ramach którego dokonał on testu swojej sprawności fizycznej, a następnie przez 4 kolejne doby nie spożywał żadnego pożywienia ani żadnych płynów, w tym czasie nie wykonywał też wzmożonego wysiłku fizycznego. Po upływie 96 godzin głodówki ponownie przystąpił do testu sprawności fizycznej. Druga część eksperymentu została przeprowadzona po upływie 6 tygodni, aby organizm badanego mógł wrócić do optymalnej formy fizycznej. Ponownie przeprowadził on test sprawności fizycznej, po którym przez kolejne 4 doby nie zaznawał snu. Po upływie 96 godzin czuwania badany ponownie przystąpił do testu sprawności fizycznej. Pomiarów sprawności fizycznej dokonywano przy pomocy testu Zuchory opierającego się na 6 próbach: szybkości, skoczności, siły, gibkości, wytrzymałości mięśni brzucha oraz wytrzymałości ogólnej. Wyniki badań przeanalizowano i opracowano. *Wyniki:* Po pozbawieniu badanego pożywienia i wody odnotowano drastyczny spadek wytrzymałości ogólnej oraz wytrzymałości mięśni brzucha. Nieznacznie spadły też szybkość i skoczność. Siła i gibkość zachowały ten sam poziom. Po pozbawieniu badanego snu odnotowano nieznaczny spadek wytrzymałości mięśni brzucha. Pozostałe zmienne zachowały ten sam poziom. *Wnioski:* Z dwóch czynników odpowiadających za regenerację organizmu to pożywienie i woda okazują się mieć większe znaczenie dla sprawności fizycznej. Pozbawione ich ciało narażone jest na gwałtowny regres większości cech motorycznych. W przypadku pozbawienia snu natomiast, mimo złego samopoczucia organizm jest w stanie się zmobilizować i podczas wysiłku fizycznego osiągnąć wyniki bardzo zbliżone do optymalnych.

## DIFFERENTIATION OF TECHNICAL AND TACTICAL TRAINING OF EPEE FENCERS WITH THE ACCOUNT OF WEAPON CONTROL

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*Background.* Evolution of competitive activities in fencing provoked the development of a system of training for competitive activities. Since it has occurred impossible to increase the volume and the intensity of practice load for fencers, a problem of finding new ways and provisions has cropped up how to improve various aspects of fencers proficiency. While fencing genesis several ways of weapon control have been developed in epee fencing, which involve application of the smooth or orthopedic hilt. As for the current moment the representation of the epee fencers in the top 16 world ranking who apply smooth hilt during the last 6 years make up 34 per cent for males and females. *Problem and aim.* Until recently the sports scientists in this country have failed to broach the subject of weapon control in epee fencing at the appropriate level, while fencers training system takes no account of the specificity of the weapon control. The aim of the study is the improvement of technical and tactical training of epee fencers by means of differentiation of the way of weapon control. *Methods.* There were used such methods as theoretical analysis and generalization, the documentary method, pedagogical observation, survey, pedagogical observation, experiment and methods of mathematical statistics. *Results and Conclusions.* The differences between technical and tactical actions of high level fencers were defined. Also were created the program for differentiation of technical and tactical training of epee fencers. The effectiveness of program was confirmed by pedagogical experiment.

Keywords: fencing, differentiation, methods of weapon control, technical and tactical training.

## WPŁYW KICK-BOXINGU NA RADZENIE SOBIE ZE STRESEM

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*Wstęp:* U osób trenujących jak i u osób które nie doświadczają aktywności fizycznej stres jest normą. Doświadczą się go w życiu codziennym od najmłodszych lat. Zarówno dzieci w szkole osoby dorosłe w pracy, czy w rodzinie są narażone na czynniki stresogenne. Czy można sobie z nimi radzić? W jaki sposób? Celem pracy jest zbadanie czy osoby uprawiające sport, a dokładniej kick-boxing są w stanie łatwiej sobie poradzić ze stresem niż osoby nie uprawiające żadnej dyscypliny sportowej. *Materiał i metody:* Obiektami badanymi są dwie grupy: osób trenujących kick-boxing oraz osób nie uprawiających żadnego sportu. Badano osoby w przedziale wiekowym 18-25 lat zarówno kobiety jak i mężczyzn. Jedna grupa to osoby trenujące kickboxing o stażu treningowym przynajmniej 2 lata oraz druga grupa studenci również o tym samym przedziale wiekowym. Narzędziem była ankieta poświęcona zagadnieniom sportu, stresu oraz lęku. Wyniki badań przeanalizowano i opracowano. *Wyniki:* Po zbadaniu i przeanalizowaniu ankiet odnotowano, iż osoby trenujące kick-boxing mają większą zdolność do opanowania swoich nerwów, czynniki stresogenne są na tyle słabsze, że zawodnicy potrafią sobie z nimi dużo lepiej radzić niż osoby nie trenujące żadnej dyscypliny sportowej. *Wnioski:* Po opracowaniu ankiety można zauważyć, że dzięki treningom osoby startujące w zawodach często bardziej są narażone na czynniki stresogenne niż osoby nie uprawiające żadnej dyscypliny. Sportowiec musi sobie radzić ze stresem, gdyż często wpływa on na wynik rywalizacji, jak wiadomo z pracy może on być paraliżujący oraz motywujący. Dzięki trenowaniu osoba jest w stanie opanować swój stres, dzięki czemu jest tej osobie łatwiej opanować czynniki stresogenne w życiu codziennym.

## UNDERSTANDING HEALTH-RELATED QUALITY OF LIFE IN UKRAINIAN YOUNG CHILDREN: SIMILARITIES AND DIFFERENCES BETWEEN SELF-REPORTS AND PROXY-REPORTS

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*Introduction.* An examination of the children life quality allows answering a number of questions related to the emotional state, social relations, medical interventions and rehabilitation, the difficulties that arise when communicating with parents and peers, to evaluate cognitive and gaming activities, behavior, own self-perception. The purpose of the study was to analyze the peculiarities of the physical, mental and social components of the young child's well-being according to self-assessment and responses of parents/ guardians. *Methods.* Children aged 5 years (n=57) and their parents/ guardians participated in the study. The PedsQL questionnaire (Generic Core Scales, versions for children and parents) was used to assess the health-related quality of life. The results were calculated according to the 4 domains – Physical Functioning (PF), Emotional Functioning (EF), Social Functioning (SF), Kindergarten Functioning (KF). Quality of life was evaluated for each parameter on a 100-point scale. Values below 50 points were interpreted as poor quality of life, 51–75 points – average, above 75 points – high. *Results.* For most scales, the quality of life indicators exceeded 75 points (PF – 78.7±1.9 points, EF – 82.3±2.6 points, SF – 76.1±2.8 points). The evaluation of child's life quality was lower by parents and statistically significantly differed in the scales PF (by 10.9 points, p<0.001), EF (by 12.7 points, p<0.001), KF (by 9.2 points, p=0.02). Children evaluated better their own physical abilities, they claimed to be able to cope with everyday tasks, seldom had a low level of energy or pain complaint. Parents' opinion is influenced by the level of development of other children, their personal expectations and expectations regarding the child, concerns about the health of the child, additional life circumstances and their own mental state. *Conclusion.* Parents gave a lower assessment of the quality of life of the child, significant differences were found on the scale, which characterizes the physical functioning and emotional state of the child. Parents' opinion is influenced by the level of development of other children, their personal expectations and expectations regarding the child, concerns about the health of the child, additional life circumstances and their own mental state.

Keywords: quality of life, children, PedsQL, proxy-reports, self-reports.

## POZIOM REGULACJI NASTROJU U PRAKTYKUJĄCYCH HATHA JOGĘ NA TLE OSÓB NIE UPRAWIAJĄCYCH TEJ AKTYWNOŚCI RUCHOWEJ

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Nastrój jest jednym z istotnych elementów zdrowia psychicznego, pozwalającym na twórczy rozwój, osiągnięcie satysfakcji z życia, samorealizację i zwiększanie poczucia własnej wartości. Istnieje wiele doktryn regulacji nastroju. Jedne zakładają, że ludzie dążą do maksymalizacji nastroju pozytywnego i unikania nastroju negatywnego. Inne z kolei zawierają informacje, że ludzie dostosowują nastrój do bieżącej sytuacji w jakiej się znajdują. Istotne jest także to, że człowiek nie zawsze dąży do poprawy nastroju, może bowiem podejmować działania obniżające lub podwyższające nastrój zarówno pozytywny jak, i negatywny. Niemniej jednak zapewnienie dobrostanu psychicznego skutecznie poprawia jakość życia, prowadzi do spełnienia, większej satysfakcji z osiągniętych celów, mniejszego stresu. Wpływ na ten stan ma między innymi niski poziom negatywnego nastroju, przewaga pozytywnych emocji i doświadczeń, zasoby materialne, kontekst kulturowy, kontakty społeczne i kondycja fizyczna. Aktywność fizyczna wpływa nie tylko na rozwój fizyczny, ale wzmacnia również układ nerwowy, zwiększa zdolność do pracy umysłowej, pozwala wyzbyć się negatywnych emocji, lęku czy depresji, wyzwala energię do podejmowania nowych zadań. Jedną z form aktywności fizycznej podejmowaną niezależnie od wieku i sprawności fizycznej jest hatha joga. W referacie zostaną przedstawione badania, których głównym celem była analiza kwestii dotyczącej wpływu ćwiczeń hatha jogi na poziom regulacji nastroju u osób ćwiczących i porównanie otrzymanych wyników z grupą kontrolną, nie praktykującą hatha jogi.

Słowa kluczowe: nastrój, regulacja nastroju, hatha joga, emocje, rekreacja ruchowa

## WALORY TURYSTYCZNE WYBRANYCH OBSZARÓW WYŻYNY KRAKOWSKO-WIELUŃSKIEJ

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W opracowaniu przedstawiono walory turystyczne (przyrodnicze i pozaprzyrodnicze) wybranych obszarów Wyżyny Krakowsko-Wieluńskiej (Jury Polskiej) położonych w obrębie gmin należących do Kłobucka, Kruszyny i Mstowa. Podstawą opracowania były przede wszystkim własne badania terenowe (opisowe, ankietowe itd.) z uwzględnieniem analizy ruchu turystycznego i selekcji wybranych obiektów o najwyższych walorach. Szczegółowe wyniki tych badań zawarto w pracach dyplomowych przygotowywanych w Zakładzie Turystyki i Rekreacji Uniwersytetu im. Jana Długosza. Stwierdzono, iż promowanie wybranych obszarów może być podstawą rozwoju różnych form turystyki na Wyżynie oraz wzmocnienia jej roli edukacyjnej i poznawczej.

## OD TURYSTYKI ZDROWOTNEJ DO ARCHEOTURYSTYKI

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W ramach prac dyplomowych realizowanych na kierunku Turystyka i Rekreacja Uniwersytetu im. Jana Długosza przedstawiono wybrane formy turystyki, które stały się przedmiotem indywidualnych zainteresowań i badań autorów w obrębie Pojezierza Mazurskiego, Beskidu Śląskiego, jak również Egiptu. W opracowaniu (forma graficzna) wykorzystano materiały własne w postaci zdjęć i wykresów uwzględniających dane statystyczne z zakresu ruchu turystycznego w wyróżnionych obszarach badawczych. Podstawą pracy – obok badań terenowych – był także przegląd archiwaliów pozyskanych m.in. z Muzeum Ustrońskiego w Ustroniu oraz Muzeum Egipskiego w Kairze.



## VOLLEYBALL AS A FORM OF PHYSICAL RECREATION

ALEKSANDRA KAŁUŻA

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The object of the study was playing volleyball as a popular form of physical recreation. The aim was to try to recognize the chosen conditions for practicing this form of recreation. The division into learners and students as well as those working professionally was the main differentiating criterion. The diagnostic poll method was used, using the survey technique. In voluntary and anonymous surveys, which were carried out in 2017, participated 62 men aged 18-39, who practiced volleyball. The research was implemented during the RALS game (Rudzka Amatorska Liga Siatkówki – Amateur Volleyball League of Ruda Slaska), which took place in the MOSiR sports hall at gen. Hallera 14a st. in Ruda Slaska. The research results indicate that the majority of respondents systematically participate in volleyball trainings, devoting them from 1 to 2 hours during the week. The main motives for practicing this form of recreation by respondents are: improving physical condition and spending time with friends. Whereas the most important benefits they gain are: a better frame of mind and an increase in the level of the body's efficiency. As obstacles in regular volleyball training the respondents mostly indicated poor motivation as well as lack of free time.

Keywords: physical activity, leisure, volleyball, men

## PHYSICAL ACTIVITY OF GYMNASIUM YOUTH AND ITS SELECTED DETERMINANTS

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Physical activity is one of the key components of the so-called healthy lifestyle. Without it, it would be impossible to keep and strengthen health, as well as the proper development of every human being. The main purpose of the research is trying to recognize physical activity undertaken in leisure time by young people. In this context, some conditions of activity seemed interesting, including preferences in terms of the choice of activity forms, time devoted to physical activities during the week, motives of practicing and obstacles limiting participation in active recreation. The research was carried out in 2018, attended by 77 students (41 girls and 36 boys) of third grade of lower secondary school in Opole. The age of the respondents is 15-16 years. In the research the diagnostic poll method was used, using the survey technique. The obtained results of the survey showed that sex very often differentiates the physical activity of young people living in the city. Boys usually spend their free time in front of a computer, while girls choose listening the music. In addition, boys during their free time are more likely to take physical activity than girls, preferring mainly to play football and cycle, while girls prefer running, walking and nordic walking. The main motive for girls in undertaking physical activity is keeping in shape, and for boys the desire to have fun and entertainment. The most frequently mentioned obstacle limiting participation in activity forms by all respondents regardless of gender was the lack of free time.

Keywords: physical activity, leisure, lifestyle, young people

## CALORIFIC EXPENDITURE OF PEOPLE PRACTICING A MODERN DANCE RECREATIONALLY

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Physical activity, especially so-called purposeful is a necessary element in the life of modern man. This issue is particularly important for young people. In their case very often, physical activities lose with the so-called virtual reality, that's why every initiative that promotes spending time in an active way is the proverbial "weight of gold". Young people, especially girls, can compete with the Internet for dance classes. The study presents selected features of girls' and young women' physical activity, taking into consideration modern dance group ADENA in Youth Culture Center in Opole. The main aim was to measure and assess calorie expenditure accompanying usual one hour of dance training. The value of burned calories per hour was also converted to 1 kg of body weight. An indirect method of observation and method of diagnostic survey were used in the research. Research tools, which were used in study are - accelerometer "Caltrac Monitor", recording used calories during training and questionnaire relating to examined group physical activity self-assessment. A group of 10 girls and young women (16-22 years), practicing modern dance recreationally, participated in the research. The analysis of results showed that average calories cost of an hour dance training was 207,63 kcal/h. On the other hand, the amount of burned calories during one hour class was 3,50 kg/h/kg. The values of obtained results were mainly affected by training intensity and individual involvement of participants in class. Furthermore, physical activity of examined girls and young women, according to their self-assessment, is sufficient. Dance, due to it's advantages, is an excellent form of physical recreation.

Keywords: physical activity, leisure, modern dance, caloric expense

## SELECTED CONDITIONS FOR PRACTICING GYMNASTICS. A HEALTHY SPINE FOR MATURE WOMEN

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In the modern world, despite numerous disadvantages of the civilization, we can observe noticeable changes in the sphere of models and patterns of behavior connected with the issue of a physical activity. A systematic physical activity is becoming an important part of a modern lifestyle, the creation of healthy habits, a sort of fashion establishing desirable patterns. In connection with increasing global ageing of the population and the growing interest of this social group in the activities of numerous institutions and organizations there are interesting proposals for organizing leisure time for seniors. The rich offer also includes physical exercises for the elderly, under the name gymnastics *healthy spine*. Such classes are also held in the city of Opole, organized by the City Hall, and the participants are senior citizens of Opole, especially women. The aim of this article was to obtain information on selected determinants (eg motives, the effects) influencing the practice of this exercise, in the opinion of its participants. The material consisted of 50 women over 60 years of Opole. Respondents regularly participated in exercise activities for at least three months twice a week for 60 minutes. The survey was a survey diagnostic questionnaire authoring tool. The positive physical and psychical changes in organism of investigated women are the effect of systematic practice of gymnastic *healthy spine*. For the most part in the exercises helps in the development of healthy lifestyle habits.

Keywords: physical activity, exercise, lifestyle, older women

## CALORIFIC EXPENDITURE OF WOMEN OF ALL AGES CULTIVATING ZUMA

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Physical activity should be a standard element for each of us in our free time. If it includes an appropriate volume of an activeness, it will result in a good influence on our body's functionality. It is very important for the physical activity to be performed with a balanced intensity that depends on our abilities. If anyone would like to start any physical activity, they need to make sure it will be interesting. Since couple of years, among various fitness forms that exist in Poland, Zumba found its followers and became very popular within the country. The subject of the research was the physical activity of women who perform Zumba. The aim of the research is to evaluate calories output when performing such a fitness activity. The researches took place in 2018 and covered 25 women living in Opole, Poland, who took part in Zumba classes once a week. The work was created by observing the women and using the Coltrac Monitor. The results about the calories output after one-hour training are presented in an absolute value – kilo-calories, and in a rational value – kilo-calories burned after an hour per one kilo body weight. These information allowed to count the component of a descriptive statistics. The analysis of received findings showed up that the age does not differentiate the level of used energy when performing the physical activity. Attending Zumba classes once a week does not fulfil Paffenberg's standard health-promoting. To reach Paffenberg's parameters, they should increase the amount of the physical activity per week.

Keywords: physical activity, leisure, fitness, Zumba, energy expenditure

## CHILDREN'S MOTIVATION TO PARTICIPATE IN SWIMMING TRAINING ACCORDING TO CONTESTANS OF CHOSEN CLUBS

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Introduction. Swimming is the best full body workout, it is very positive for our immunologic system, prevents diseases of the spine, it is relaxing and improves physique. During activities in water almost all body parts are involved: arms, legs, back, abdominal. Swimming has positive effect on almost all of human body systems, starting from the human movement system, breathing, blood system, digestive system, ending on the nervous system. The main subject of this work is the motivation of young people while starting swimming training. Material and methods. 50 young people between 11 and 16 years old were tested, all of them were training in swimming clubs all over Opole province. The diagnostic survey method and the questionnaire technique were used. The research tool was an original questionnaire consisting of 15 questions. Results: Based on the answers given by the girls, can be said that main motivation were : willingness to improve swimming skills (52%), improve health ( 48%), physique and contact with peers ( 44%). Based on the answers given by the boys, two main motivation were improving swimming skills (84%) and improving physique (48%). Freestyle were most attractive, second place were classic style, and least interesting was butterfly style. The results of swimming training observed by the subjects , were improving physique, swimming skills and exercise capacity. The willingness of sport competition is different for girls and boys. Boys are more motivated in gaining sport successes. conclusions. Conclusion:Swimming is an attractive form of physical activity. Due to its health benefits, it is popular in all age groups. The swimming skills learned by children are a permanent element of physical education that enables lifelong physical recreation. Children took part in courses that affects in raising their swimming interests . During this courses children learned swimming skills

Keywords : swimming, training, motivations

## SPORTS AND MARTIAL ARTS IN STUDENT'S FACULTY OF PHYSICAL EDUCATION AND PHYSIOTHERAPY PERCEPTION

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*Introduction:* In public opinion sports and martial arts are recognised as medium of many desired values. Apart from health benefits they served moral education and provided positive behaviour patterns. In ideational assumptions people who practice are striving to psychophysical improvement and self-fulfilment through practicing techniques of martial arts. In the course of testing advantages arising from that types of exercises we can distinguish :ability to preventing aggression, ability to own control, ability to calm responding in hazardous situations. Specificity of each style is linked with different work out, varied type of fight in full contact or non-contact and diversified rules. Wherefor public perception and reception of martial arts are based on styles. The aim of the examination are to find out student's opinion about various sports and martial arts, assessment of their attractiveness and effectiveness in fight. *Material and Methods:* Examinations have been done in department of Technical University in Opole, Faculty of Physical Education and Physiotherapy ,in total it has been examined sixty seven people including 34 men and 33 womens. In researches have been applied diagnostic poll method, questionnaire survey. Research tool was proprietary questionnaire composed of 15 questions. *Results:* Based on the results obtained ,it can be concluded, that respondents considered that sports and martial arts are less popular than team games, however they recognize in them many values. The most important advantages in respondent's opinions are skills to fight, self-defence, strengthening mental toughness, overcome own weaknesses and high level of physical efficiency. Less important for students turned out health effects, however examined groups assessed fights even as risky due to injuries in fight. Developing internal discipline, bravery and ability to self-control provide the biggest advantages this kind of physical activities and have been declared as significant educational element of children and teenagers who properly shape their personality. *Conclusion:* Examined students perceive martial arts positively ,they considered MMA, box and kick-boxing for the most efficient fights. The basic reason why people do not undertake the practice is the fear of health loose in fight .

Keywords: martial arts, values, motivation

## TACTICAL ANALYSIS IN TERMS OF KINEMATIC PROPERTIES OF TAEKWON-DO FRONTAL AND ROUNDHOUSE KICK

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*Introduction:* Frontal and roundhouse kick are most commonly used in sport combat taekwon-do competitions. The crucial aim in the competition is to achieve victory by faster obtaining more points than opponent. The aim of the study is to gain knowledge by analysing maximum velocity of those techniques in laboratory conditions, then justifying its usage and combination during competitions by exposing its pros and cons of usage regarding situation. *Material and methods:* 15 males with mean age of  $21.9 \pm 6.8$  years; body mass:  $71.1 \pm 11.5$  kg; height:  $175.7 \pm 8.4$  cm were analysed using Human Motion Lab, to obtain time and place values of a performed kicks to a training shield. Based on this data, maximum velocity of those kicks were computed. *Results:* Mean maximum velocity of frontal kick was 10.43 m/s for right side and 10.37 m/s for left side and 15.12 m/s for right side and 14.17 m/s for left side roundhouse kick. Execution time of frontal kick is shorter than roundhouse kick. those values were analyse in context of performed attacks and their conditions, as well as possible opponent's defences. *Conclusions:* Frontal kick is performed to a middle strike zone and its movement is only in sagittal plane. Roundhouse kick is slower because of initial execution, but is multidimensional and comes up with higher maximum velocity, therefore power. It is suggested to use non-preferred leg to perform frontal kick in order to lower upper limb's guard by opponent, then score more points by performing more powerful strike with preferred leg to a upper strike zone.

Keywords: biomechanics, martial arts, velocity, combat sports, combat competition



## ROLA ĆWICZEŃ KOORDYNACYJNYCH U MŁODYCH ZAWODNIKÓW PIŁKI SIATKOWEJ

ANASTAZJA KOLISIECKA

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Ze względu na specyfikę gry w siatkówkę, problematyka poprawy zdolności koordynacyjnej ma szczególne znaczenie i jest warunkiem udanego opanowania elementami techniki gry. W skoordynowanej działalności sportowej zdolności motoryczne przejawiają się w interakcjach, ale w pewnych sytuacjach rola poszczególnych umiejętności będzie się zmieniała. Dla każdego z określonych rodzajów zdolności koordynacyjnych opracowano specyficzną metodykę ich rozwoju.

Tematem prezentacji są praktyczne przykłady metodyki do poprawy zdolności koordynacyjnej u siatkarzy. Obejmują one zarejestrowane na filmie konkretne zestawy treningowe, wykonywane pod opieką trenerki podczas zajęć z siatkówki. Przykłady te pokazują wpływ ćwiczeń na różne rodzaje zdolności koordynacyjnych, w tym na umiejętność do kontrolowania czasowych, przestrzennych, siłowych parametrów ruchów, zdolność utrzymania równowagi połączona z mobilizacją systemów wzrokowych, słuchowych, przedsionkowych i somatycznych, odczucie rytmu jako zdolność dokładnego odtworzenia parametrów przestrzennych, czasowych, zdolność do orientacji w przestrzeni i dostosowania działań ruchowych w szczególnych i dynamicznie zmieniających się warunków.

Słowa kluczowe: metodyka, zdolności koordynacyjne, trening siatkarzy

## SPINE AND HIP FLEXIBILITY AND FOOT ANGLES IN PRE-PROFESSIONAL ADOLESCENT BALLET DANCERS

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SEWERYN GOUNDOROV, BŁAŻEJ CIEŚLIK

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*Background:* Ballet is a high-performance activity that requires an advanced level of technical skills. Requirements needed for this sport, such as proper foot placement, or the appropriate range of motion, are formed from an early age. Due to this fact, people practicing this sport are exposed to joints hypermobility and foot or ankle incorrect positioning, which in the future may cause pain in these areas. Therefore, the purpose of the present study was to assess spine and hip range of motion and foot angles in adolescence female dancers and compare the results with those obtained from non-dancing age and sex-matched students. *Methods:* Twenty female dance students (DANCE) and a control group (CON) of 20 female were examined. Inclusion criterion for the study group was a dance training experience over 10 years. Mean age of the DANCE group was  $15.75 \pm 1.58$  years and in the CON group  $15.30 \pm 1.78$  years. Spinal and hip range of motion (ROM) assessment was carried out using a goniometer and centimeter tape. Foot angles were assessed using podoscope. *Results:* In spinal ROM examination, statistically significant differences were demonstrated in the Tomayer's test ( $p < 0.01$ ), thoracic spine mobility ( $p < 0.01$ ) and lumbar rotation ranges ( $p < 0.01$ ). Analyzing hip joint ROM, statistically significant differences were observed in all examined movements. During foot angles evaluation, statistically significant differences were demonstrated in both feet ALFA angle ( $p < 0.01$ ). *Conclusion:* Ballet dancers developed greater hallux valgus in both the dominant and non-dominant limb. They demonstrated higher flexion and extension range of motion in the thoracic spinal segment and in the lumbar spine movement for the extension and rotation, as well as in all hip joint movements of both lower limbs. The obtained results predispose adolescent ballet dancers to an increased risk of pain related to trauma of the musculoskeletal system.

Keywords: ballet dancers, hallux valgus, range of motion, joint, adolescence

## SELECTED PSYCHOLOGICAL ASPECTS OF URBAN AUDIOSPHERE

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Currently, various initiatives are being developed related to the study of acoustic landscapes (sound landscapes). Research has shown that urban audiosphere, the urban sound landscape is a very interesting factor in the life of the city. The ability to study sound in the landscape offers new perspectives for the development of health psychology. That is why it is worth asking whether sound is an important factor differentiating well-being and even whether we see the emergence of distinctive acoustic communities and whether we can see the effects on health and emotions. We would like to focus on two key issues - the sound aspect of urban landscapes (Częstochowa, Poland) and the way in which it is experienced and valorised by different people. We rely on the idea of research on the sound landscape developed by the Canadian composer and music thinker R. Murray Schafer, the initiator of the World Soundscape project, whose basic concepts were a continuation of the activities of the World Forum on Acoustic Ecology. The long-term goal of this work is to understand how the use of the concept of sound landscapes can help create friendly, environmental sound in cities and create an academic discussion forum on selected psychological aspects of the sound landscape.

Keywords : urban soundscapes, quality of life emotions, health

## HEALTH BEHAVIORS AND WORK-RELATED MUSCULOSKELETAL DISORDERS AMONG PHYSIOTHERAPISTS AND NURSES

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*Background:* During work, physiotherapists and nurses have to take various uncomfortable positions. This strain joints their joints and increases the risk of injuries. Both professions are necessary for health care and contribute to the patient's recovery process. Work-related injuries may cause a decrease in efficiency when working with the patient. Comparing traumas in physiotherapists and nurses can increase the self-awareness of these professional groups about their health habits and work ergonomics. Therefore, the aim of this study was to assess and compare health behavior and work-related musculoskeletal pain among polish physiotherapists and nurses. *Methods:* The study comprised a group of 304 participants: 179 physiotherapists and 125 nurses. The method used during the study consisted of a survey, with two main research tools being: a self-made questionnaire with pain-related questions and Health Behavior Inventory (IZZ) according to Juczyński, which evaluates health behavior in 4 categories, i.e. positive mental attitude, preventive behavior, proper nutrition habits, and health practices. *Results:* The IZZ average score was  $5.05 \pm 1.96$  points in physiotherapists and  $4.50 \pm 1.86$  in nurses ( $p=0.01$ ). Analyzing the IZZ components, a statistically significant difference was observed in positive mental attitude, proper nutrition habits and health practices ( $p<0.05$ ). Analyzing work-related musculoskeletal pain, 96% nurses and 85% physiotherapists ( $p<0.01$ ) are experiencing currently pain while working. Pain intensity measured with the VAS was  $4.06 \pm 2.05$  in physiotherapists and  $4.88 \pm 1.75$  in nurses ( $p<0.01$ ). Physiotherapists suffer more often from upper limb pain (50% vs 38%), while nurses from back pain (93% vs 67%) and from lower limb pain (40% vs 26%). *Conclusion:* Both professional groups experience work-related musculoskeletal pain, however, nurses experience pain more often and more severely. On the other hand, physiotherapists demonstrate higher health behavior practices, which can reduce the musculoskeletal system pain. Nevertheless, the percentage of employees experiencing work-related musculoskeletal pain is extremely high in both professions, which suggests greater attention to this problem.

Keywords: physiotherapists, nurses, health behaviors, pain, work