



5th International Scientific Conference

**PHYSICAL ACTIVITY,
HEALTH AND QUALITY OF LIFE**

BOOK OF ABSTRACTS

Košice, Slovakia, April 24-26, 2024



Pavol Jozef Šafárik University in Košice
Institute of Physical Education and Sport



5th International Scientific Conference
„Physical Activity, Health and Quality of Life“
Košice, Slovakia, April 24-26, 2024

BOOK OF ABSTRACTS

Petra Tomková - Richard Melichar (eds.)

Košice, Slovakia 2024

5th International Scientific Conference „Physical Activity, Health and Quality of Life“

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PARTNERS



JAN EVANGELISTA PURKYNĚ
UNIVERSITY
IN ÚSTÍ NAD LABEM



Dear colleagues and friends

It is our great pleasure to welcome you to Ružín near Košice for the 5th International Scientific Conference "Physical Activity, Health and Quality of Life", organised by the Institute of Physical Education and Sport of the Pavol Jozef Šafárik University in Košice in cooperation with Uniwersytet HP im. Jana Długosza w Częstochowie, Lesya Ukrainka Volyn National University, and the J. E. Purkyně University in Ústí nad Labem.

After four successful conferences „Recreational Sport, Health, Quality of Life“ we have decided to continue with a new name „Physical Activity, Health and Quality of Life“. The theme of the conference creates a space for professionals in the field of physical activity to meet in diverse areas of health and quality of life for individuals, communities and society as a whole. We create space for interdisciplinary exchange of knowledge and experience.

This collection of papers or abstracts, presented in the form of proceedings, includes contributions from 76 authors from a variety of countries. With a focus on strong international relations, we sincerely thank all our partners and collaborating institutions.

Special thanks go to all the authors, reviewers, editors, members of the Organising and Programme Committees and technical support staff. Wishing all participants a successful and fruitful conference, we hope to see you again at the 6th International Scientific Conference on Physical Activity, Health and Quality of Life.

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Conference Program

24 APRIL 2024, WEDNESDAY

From 15:00	Arrival, accommodation Hotel Lesanka, Košická Belá 1160, 044 65 Hotel Sivec, Košická Belá-Košické Hámre, 044 65
15:30 – 17:00	Social program, wellness
17:00 – 18:00	Bowling
18:00 – 19:30	Dinner

25 APRIL 2024, THURSDAY

7:30 – 9:00	Breakfast
9:30 – 9:45	Opening ceremony – Conference room
9:45 – 11:00	Plenary session – Conference room <i>Chairmen: prof. PaedDr. Ján Junger, CSc.; prof. dr hab. Jacek Wąsik</i> Relationship of cardiorespiratory fitness of university students with leisure-time physical activity and somatic parameters dr. hab. prof. UR Emilian Zadarko Behavioural innovations in the context of physical activity, health, and quality of life Mgr. Iveta Rajničová Nagyová, PhD. Associations between organized team and individual sports and adolescent mental well-being Mgr. Zdeněk Hamřík, Ph.D.
11:00 – 11:30	Coffee break
11:30 – 12:30	Session I – Conference room <i>Chairmen: doc. PaedDr. Klaudia Zusková, PhD.; dr hab. Mariusz Ozimek prof. AWF</i> The effect of a health-oriented exercise program on body weight and body posture in schoolgirls Elena Bendíková, Peter Šagát Changes in somatic indicators and health-oriented fitness of boys and girls of younger school age Robert Rozim

	<p>Selected active and inactive lifestyle forms among university Students Ján Junger, Agáta Horbacz, Ferdinand Salonna, Ivan Uher</p> <p>Teachers' experiences and preparedness to work with students with depression and in mental health crisis: results of the Heads Up project Maja Gajda</p> <p>Motivating active lifestyles: an interdisciplinary approach to encourage physical and sports activities Aleš Vlč</p>
12:30 – 14:00	Lunch
14:00 – 15:00	Session II – Conference room
	<i>Chairmen: prof. PaedDr. Elena Bendíková, PhD.; prof. dr hab. Anatolii Tsos</i>
	<p>The share of attention training in sports preparation in top athletes on sports performance Marie Blahutková, Martin Dlouhý, Svatava Nováková, Zuzana Küchelová, Miroslaw Górny, Miroslav Sližik</p> <p>Potential effects of Finnish sauna use in the process of improving body composition characteristics Robert Podstawski, Krzysztof Boryslawski Bożena Hinca , Kevin J. Finn , Aleksandra Dziełak</p> <p>Aerobic performance and physical activity among Pavol Jozef Šafárik University students post-COVID-19 Marcel Čurgali, Agáta Horbacz, Ján Junger</p> <p>Analysis of physical activity readiness in eastern Slovakia university students amid the COVID-19 pandemic Richard Melichar, Dávid Kaško, Ján Junger</p> <p>Comparison of cardiovascular fitness and beep test performance in university students Dávid Kaško, Richard Melichar, Agáta Horbacz, Ján Junger</p>
15:00 – 15:20	Coffee break
15:20 – 16:30	Poster Session
	<i>Chairmen: dr Maria Zadarko-Domaradzka; dr hab. Eligiusz Matolepszy. prof. nadzw. UJD</i>

Does finger hang provide a valid estimate of finger flexor endurance in differing ability groups of sport climbers?

Patrik Berta, Jiří Baláš

Recommended physical activity in neurodegenerative diseases

Joanna Cholewa

Evaluation of visual search indices in relation to the sports skill level: preliminary investigation

Kacper Cieśluk, Justyna Krzepota, Dorota Sadowska

Environmental literacy of adults about the state of the environment, impact on health and physical activity.

Iveta Cimboláková, Ivan Uher

Analysis of injuries in football

Natália Czaková, Janka Kanášová, Jakub Mlej

Organisation of extracurricular physical education work in general secondary education institutions in the context of war

Olena Demyanchuk, Liudmyla Vashchuk, Vasyl Pantik

Women's sport in Poland in "Przegląd Sportowy" in the years 1921-1939

Teresa Drozdek-Małolepsza

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Measurement of the vaginal pressure profile during selected sports activities

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Football players' awareness of injury prevention strategies

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Edyta Nizioł-Babiarz, Maria Zadarko-Domaradzka

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Aneta Anna Omelan, Justyna Wiśniewska, Robert Podstawski

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Women's activity in the Olympic movement from 1896 to 1936

Renata Urban

Formation of motivational interest in physical education and sports among students

Liudmyla Vashchuk, Demyanchuk Olena, Vasyl Pantik

The essence and evolution of the concept of "quality of life" in economics

Liudmyla Yeliseieva

18:00 – 02:00 **Gala Dinner**

26 APRIL 2024, FRIDAY

8:00 – 10:00 **Breakfast**

10:00 – 10:30 **Closing ceremony**

10:00 – 15:00 **Workshop: Heads Up:
Teacher and Mental Health of Adolescents. (in Slovak)**

Address: Kulturfabrik Tabačka (Gorkého 2, Košice)

Contact: heads-up-erasmus@upjs.sk; ladislav.krucanica@upjs.sk

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INVITED LECTURES



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- × × **PHYSICAL ACTIVITY,**
- × × **HEALTH AND QUALITY OF LIFE**
- × ×

Relationship of cardiorespiratory fitness of university students with leisure-time physical activity and somatic parameters

Emilian Zadarko¹

¹ *Institute of Physical Culture Sciences, Medical College of Rzeszow University, Poland*

Introduction: Physical activity is an important element of a healthy lifestyle, body weight control and fitness formation. Systematic physical exercise, in addition to its benefits for the prevention of civilisation diseases, also has an impact on human biological development, including the level of physical fitness. Extended analysis of studies on students' physical activity suggests that students have considerable leisure time, however, physical activity is not among the preferred forms of leisure time and does not distinguish students favourably from the general population. Research reviews on physical activity and fitness of university students from different countries from 2011-2021 report average activity and fitness scores. During the COVID 19 pandemic, reduced levels of student physical activity were observed, highlighting the importance of promoting active lifestyles in case of obesity. Therefore, in addition to recommendations for physical activity, the latest WHO guidelines pay great attention to the need to reduce sedentary lifestyles and replace them with even low-intensity activity. In research conducted during the COVID-19 pandemic, it was noted that there was a shift in forms of physical activity among students from strength and group activity to endurance and individual activity. The results of the study so far show that gender and field of study differentiate both the forms, reasons and frequency of physical activity taken up by students and that men are more likely to engage in physical activity than women. Cardiorespiratory fitness (CRF) reflects a person's functional fitness and is the ability to sustain effort, conditioned by cardiovascular and respiratory fitness. Cardiorespiratory fitness (CRF) is a strong indicator. Low CRF is a risk factor for adverse cardiovascular events CRF in adults is a strong predictor of overall mortality and is inversely correlated with hypertension or incident diabetes. Studies suggest that increasing the intensity or volume of physical activity alters cardiorespiratory endurance. Even moderate intensity of physical activity at a level of 40-55% of VO_{2max} is sufficient to improve CRF. Exercise intensity and time spent in additional physical activity have been shown to be related to body tissue composition, and cardiorespiratory fitness.

Maximum oxygen uptake (VO_{2max}) is a measure of CRF criterion. Direct measurement of VO_{2max} is considered the best indicator of aerobic fitness. Most of the analyses available in the literature on the cardiorespiratory endurance of academic adolescents are based on tests in which the rate of maximal oxygen uptake is calculated by indirect methods. Cardiorespiratory fitness and the measurement of body mass components (mainly body fatness) are generally considered crucial in the assessment of optimal health.

Therefore, the aim of this study was to determine the nature of the relationship between leisure-time physical activity and the level of cardiorespiratory endurance of university students studying in Poland using direct measurement of maximal oxygen uptake VO_{2max} , taking into account the somatic constitution of the students studied.

Material and methods: The study material consisted of students of Polish higher education institutions with different study profiles. Ultimately, the analysis included 309 subjects from the group of students aged 20-24 years. There were 154 women (49.8%) and 155 men (50.2%) in this group. Selected anthropometric measurements were taken. BMI, WHR, WHtR indices were calculated. Somatic body type was assessed using the Heath-Carter method. Cardiorespiratory endurance was assessed using the 20-metre shuttle test (20 m SRT). Determination of maximum oxygen uptake during the 20 m shuttle test (20 m SRT), with increasing load was performed using a K4b2 portable breath gas analyser (Cosmed, Italy). At the end of the test, the level of maximum heart rate was determined using Polar sports testers. The Minnesota Leisure - Time Physical Activity Questionnaire MLTPAQ questionnaire, a standardised research tool, was used to measure leisure time activity. The non-parametric Mann-Whitney u-test was used to assess the significance of differences between the analysed groups. Division was performed independently for the female and male populations. The individual groups were designated with the symbols Q1, Q2, Q3 and Q4. The distribution of selected parameters was presented in the four groups (quartile groups) thus formed.

Results: The majority of the underweight subjects were women, and the overweight and obese subjects were men. The distribution of results in relation to gender in all compartments of cardiorespiratory endurance levels determined by direct measurement of oxygen uptake was similar. Leisure-time physical activity levels were significantly higher in men for high-intensity exercise and for the total measure.

Conclusions: An increase in the endomorphic component in the physique of academic adolescents was associated with a decrease and the ectomorphic component with an increase in maximal oxygen uptake. A summative increase in leisure-time physical activity in both women and men, and activity of high intensity, was associated with an increase in maximal oxygen uptake.

In the quartile groups Q4 in women and Q3 and Q4 in men, where the median physical activity was close to the recommended weekly physical activity values, the greatest increases in distance covered were recorded. This may indicate of a significant effect of the recommended amount of weekly physical activity on shaping the endurance capacity of the students studied.

Keywords: Cardiorespiratory Fitness, MLTPAQ, University Students

Behavioural innovations in the context of physical activity, health, and quality of life

Iveta Rajničová Nagyová^{1,2}

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² European Public Health Association – EUPHA, Utrecht, The Netherlands

Introduction: Physical inactivity poses a significant global health challenge, contributing to the rise of non-communicable diseases and diminished quality of life. Despite widespread awareness of the benefits of regular physical activity, many individuals struggle to adopt and maintain active lifestyles. Traditional approaches to promoting physical activity have shown limited effectiveness, highlighting the need for innovative strategies to address this pervasive issue.

Material and methods: The traditional interventions often rely on education and awareness campaigns, which may fail to address the complex array of factors influencing individual behaviour. Furthermore, societal changes such as technological advancements and sedentary lifestyles present additional challenges to promoting physical activity. Understanding the drivers and barriers to behaviour change and identifying novel approaches are essential to addressing this public health concern. Related to this, the World Health Assembly adopted the first ever global Behavioural Sciences for Better Health resolution on 29 May 2023 (WHA76.7). This resolution requests World Health Organisation (WHO) to mainstream and support behavioural sciences in public health, across WHO and within Member States on request, including: enhance awareness, knowledge and evidence; and provide technical assistance, normative guidance, and capacity-building.

Results: Previous research have identified several promising behavioural innovations that have shown efficacy in promoting physical activity and improving health outcomes. These innovations encompass a range of strategies, including gamification, social support networks, personalized feedback, environmental modifications, and integration with technology. Gamification techniques, such as using rewards and challenges, have demonstrated success in increasing motivation and engagement in physical activity. Social support networks leverage interpersonal relationships to provide encouragement and accountability, fostering long-term adherence to exercise regimens. Personalized feedback mechanisms, facilitated by wearable devices and mobile applications, offer individuals tailored insights into their activity levels and progress towards goals. Environmental modifications, such as creating walkable communities and accessible recreational spaces, can encourage spontaneous physical activity. Integration with technology, such as virtual reality and exergaming, presents innovative opportunities to make exercise more enjoyable and accessible to diverse populations.

Conclusions: The WHO Resolution underscores the importance of adopting a multi-faceted approach to promoting health and improving well-being. Behavioural innovations offer promising avenues for addressing the complex interplay of individual, social, and environmental factors influencing physical activity behaviour. Moreover, these innovations emphasize the need for personalized, adaptive interventions that cater to individuals' unique preferences, motivations, and circumstances. By harnessing the power of technology, social networks, and environmental design, stakeholders can create

supportive ecosystems that facilitate sustained engagement in physical activity and enhance overall well-being. Moving forward, further research is needed to evaluate the long-term effectiveness and scalability of these innovations.

Keywords: Behavioural Insights, Public Health, Health Behaviour Change, Non-Pharmacological Interventions, Quality Of Life

Funding: This work was supported by the grant APVV-22-0587.

Associations between organized team and individual sports and adolescent mental well-being

Zdeněk Hamřík¹

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Introduction: The benefits of physical activity, including sports, on adolescents' psychological and physical well-being are widely recognised. However, the impact of different types of sports, specifically individual versus team sports, on mental health and well-being has received less attention, especially concerning gender and grade differences. This study aims to deepen our understanding of how participation in individual and team sports affects indicators of mental well-being among children, with a particular focus on differences by gender and grade level.

Material and methods: We analysed cross-sectional data collected over four waves (2017, 2019, 2021, and 2023) from adolescents in 5th, 7th, and 9th grades. A total of 3,318 participants (an average of 46.8% girls across waves) were surveyed regarding their participation in individual and team sports activities (SA), defined as engagement in sports at least twice a week. We evaluated the association of SA with life satisfaction (LS), the WHO Well-being Index (WHO5), and self-rated health (SRH), using t-tests and chi-square tests to assess differences by type of sports, gender, and grade.

Results: Across all data points, participation in sports was associated with better outcomes in LS, WHO5, and SRH across all grades and genders. Notably, children engaged in team sports demonstrated significantly higher well-being scores than their peers in individual sports. This advantage persisted despite a general decline in sports participation with advancing age. Gender disparities were pronounced, with boys not only participating more frequently in sports activities but also reporting better well-being outcomes than girls. This discrepancy underscores the importance of developing gender-sensitive interventions to promote equitable access to sports. Grade-wise, younger children (5th graders) showed higher sports participation rates and better well-being outcomes than 7th and 9th graders, indicating a potential decrease in engagement and well-being with age. This trend suggests that interventions should be tailored not only by gender but also by age group to address the specific needs and challenges of each demographic. The analysis of differences between team and individual sports revealed that team sports participants consistently reported better outcomes in all three measures of well-being (LS, WHO5, SRH) across all genders and grades compared to individual sports participants.

Conclusions: Our analysis emphasises the significant role of sports participation in fostering mental well-being among children, with team sports offering particular advantages. However, the observed gender and grade disparities highlight the critical need for targeted strategies to ensure inclusive and equitable access to sports activities for all children. To optimise the mental health benefits of sports for children, stakeholders should implement interventions that promote team sports and address the specific barriers to participation faced by girls and older adolescents. School and sports settings and community programs should prioritise inclusive sports programs that cater to diverse interests and abilities, ensuring every child can engage in meaningful physical activity supporting their mental well-being.

Keywords: Mental Well-Being, Health, Adolescents, Sport; Leisure



LECTURES



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- × ×

The Effect of a health-oriented exercise program on body weight and body posture in schoolgirls

Elena Bendíková^{1,2}, Peter Šagát²

¹ Faculty of Education, Department of Physical Education and Sports, CU Ružomberok, FIEPS, Slovakia

² Sport Sciences and Diagnostics Research Group, GSD/Department of Health and Physical Education, Prince Sultan University, Riyadh 11586, Saudi Arabia

Introduction: The increasing prevalence of poor posture and excess body weight turning into obesity in the school-age population is becoming a global epidemic problem of the 21st century due to a lack of primary prevention. The aforementioned areas interact and contribute to the quality of cardiovascular and postural health of school-age children in terms of promoting health-related fitness. The aim of the research was to find out the effect of a health-oriented exercise program on body weight and overall posture in school-age girls.

Material and methods: The experimental group (ES)_{N=19} and the control group (CS)_{N=17} consisted of pubescent female students. The girls from ES_{N=19} underwent a five-month health-oriented exercise program focused on body weight reduction and improvement of their overall body posture. When it comes to data collection methods, we applied standardized procedures. We used a standardized method for physical education practice to assess posture. Body composition was evaluated with a Tanita segmental body composition analyzer. The obtained data were processed by means of standardized procedures and methods.

Results: Previous research have identified several promising behavioural innovations that have shown efficacy in promoting physical activity and improving health outcomes. These innovations encompass a range of strategies, including gamification, social support networks, personalized feedback, environmental modifications, and integration with technology. Gamification techniques, such as using rewards and challenges, have demonstrated success in increasing motivation and engagement in physical activity. Social support networks leverage interpersonal relationships to provide encouragement and accountability, fostering long-term adherence to exercise regimens. Personalized feedback mechanisms, facilitated by wearable devices and mobile applications, offer individuals tailored insights into their activity levels and progress towards goals. Environmental modifications, such as creating walkable communities and accessible recreational spaces, can encourage spontaneous physical activity. Integration with technology, such as virtual reality and exergaming, presents innovative opportunities to make exercise more enjoyable and accessible to diverse populations.

Conclusions: Our findings prove that effective and quality physical activity in school-age girls performed through health-oriented physical activity programs is important as it reduces the risk of cardiovascular, metabolic, and musculoskeletal diseases. Proper function of the musculoskeletal system and control of body weight in terms of balance are among the key aspects in promotion of a healthy lifestyle in the school-age population.

Keywords: Body Posture, Body Weight, Health, Health-Oriented Program, Pupils

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The Share of attention training in sports preparation in top athletes on sports performance

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Good attention is one of the conditions for excellent sports performance in elite and performance sports. As part of the IRP International Cooperation project at CESA VUT, we with sports coaches focused on specific forms of attention training. These led to the improvement of sports performances in selected sports. It was individual sports training in sports training with the implementation of attention development programs for 40 athletes. 20 athletes were in the junior category of top and performance sports and 20 adult representatives from the Czech Republic, Slovakia and Poland. They competed in shooting, tennis, classical dance, athletics, cycling, karate, soccer and floorball. We implemented a specific program of psychomotor training focusing on the development of attention for selected athletes for a period of two years. The results show that attention training in sports preparation has its justification in relation to peak sports performances.

Keywords: Top Sport, Sports Training, Psychomotoricity Skills, Attention

Aerobic performance and physical activity among Pavol Jozef Šafárik University students post-COVID-19

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Introduction: In comparison to childhood, college students have generally lower levels of physical activity (PA). Previous studies have shown that during the transition from adolescence to adulthood, including college, there is an increase in physical inactivity. A systematic review study found that a significant number of students have not meet even the minimum recommendation for physical activity during the pandemic declaration period. A decline in PA was also observed in Slovak students.

Material and methods: In the study, the research sample consisted of 465 students. There were 140 males (20.12yrs±1.67) and 325 females (20.07yrs ±1.65) in the student population. Aerobic endurance data were obtained from the results of a 20m multistage fitness test (beep test). Other necessary data were assessed from the international PAR(Q) questionnaire including two questions on PA frequency before and after pandemic.

Results: A negative impact on physical activity (PA) was reported by 23% of all students. For 66.5%, students' PA was not negatively affected by the pandemic. 10.5% of the students did not pay attention to the change in this area. 25.8% of male students and 21.7% of female students were negatively affected. Responses of no impact on PA were reported by 65.1% of males and 67.2% of females. In the aerobic performance tests, the female group (Mean = 34.06 ± 4.91) performed better than the male group (Mean = 41.88 ± 6.38). According to the norm, women reached the level of above fair performance and men reached the level of fair performance. When comparing the groups of students with and without a negative effect on PA, we did not observe statistically significant changes between females ($p > .05$). In male group, we found significant differences ($p < .01$) with a medium effect size ($d = .62$).

Conclusions: Our findings confirm the results of previously published studies. The differences between men and women may be due to the different preference for physical activities of two sexes. Men are more likely to prefer combinations of strength and endurance training. Women may prefer combinations of core-strengthening exercises with a stronger representation of endurance exercises and PA. Flexibility in performing PA under constrained conditions appears to be an important factor in maintaining students' physical fitness.

Keywords: Beep Test, PARQ, Aerobic Endurance, VO₂ max

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Teachers' experiences and needs in the field of working with students with depression - results of research project carried out as part of the Heads Up Erasmus+

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Introduction: Recent studies underscore the need to address the issue of adolescents' mental health, as a significant proportion of teenagers report frequent feelings of anxiety and sleep disturbances, and girls in particular, have lower levels of mental well-being indicators than boys. External triggers, such as the Covid-19 pandemic and the war in Ukraine, further increase the risk of depressive disorders in adolescents. This study aims to assess teachers' preparedness, attitudes, and knowledge regarding supporting students with depression within the educational context.

Material and methods: The presented data are from studies conducted as part of the Heads Up Erasmus+ project. A mixed-methods approach was adopted, and both quantitative and qualitative studies were conducted. The study was aimed at the teachers working in public primary and secondary schools in Poland, Slovakia and Czechia. Quantitative data were collected through online questionnaires (N = 2626). Additionally, semi-structured interviews were conducted in focus group settings. During the transcription process, recordings were converted into written text. Subsequently, data analysis was conducted using MaxQda software. Theoretical categories were identified in the text, and codes were created during the analysis phase.

Results: On average, approximately half of the teachers reported having had students with depression on their caseloads, which highlights the prevalence of this issue within educational settings. However, the findings reveal gaps in teachers' knowledge about depression and their preparedness to effectively support students experiencing this mental health condition. The teachers during interviews expressed the need for systemic support and close cooperation among family members, teachers/school personnel, and external specialists such as mental health professionals in order to efficiently support students in mental health crises.

Conclusions: The study highlights the pressing need for comprehensive support mechanisms for teachers working with students with depression. Additional efforts should be focused on enhancing teacher preparedness, fostering supportive attitudes, and improving knowledge about depression symptoms within educational settings. By addressing these needs, educators can play a vital role in promoting the mental health and well-being of students, thereby contributing to a more supportive and inclusive learning environment.

Keywords: Adolescent Mental Health, Teacher Preparedness, Depression Support in Schools

Selected active and inactive lifestyle forms among university students

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Introduction: Knowledge about the lifestyle of our ancestors confirms that physical activity (PA) had a dominant position in the development and formation of the human body throughout the entire phylogenesis. PA has become one of the basic life necessities due to its importance. Its absence, typical for the current era, manifests primarily in the disruption of human health and performance. The aim of our contribution was to analyze selected active and inactive forms of lifestyle among university students.

Material and methods: The research involved two universities in Kosice – Pavol Jozef Safarik University (UPJŠ) and Technical University (TUKE). The research sample consisted of 1140 students, with 655 from UPJŠ and 485 from TUKE. In terms of gender, 589 men and 551 women participated in the study. The required data were collected through the completion of an extended version of the International Physical Activity Questionnaire - IPAQ, which was administered and distributed via Google Forms online tool. For this contribution, we selected questions related to their mode of transportation during the observed week, Vigorous Physical Activity (VPA), Moderate Physical Activity (MVPA), and sitting time. The research was conducted in two phases: November 2022 and November 2023. For statistical processing of the data, we used the non-parametric Mann-Whitney U test and Spearman's correlation coefficient at a significance level of $p < 0.05$.

Results: We found that students performed VPA and MVPA lasting continuously for more than 10 minutes on average one day per week for a duration of 40 - 45 minutes. A total of 1 hour 20 minutes, but only within one day. This conclusion applies regardless of gender, with UPJŠ students being more active than TUKE students. In fulfilling school obligations, they use walking for at least 2 days on average for 1 hour, and for moving from place to place 1.5 hours daily and in their free time over 3 days on average 1 hour 20 minutes. In this respect, TUKE students are more active. In terms of transportation, students spend almost 1.5 hours in a transport vehicle and only minimally use a bicycle (8 minutes). As time dedicated to PA decreases, sitting time increases. On average, students sit for 6 hours daily during the workweek and 5 hours 20 minutes during weekends, which is 20 minutes more than in our research from 2015. There is a statistically significant difference between the sitting time of women and men (women sit nearly 1 hour more) and between universities, with a difference of up to 1.5 hours for UPJŠ. Similar differences are observed in sitting times during weekend days.

Conclusions: In general, the results in all observed areas confirmed the sedentary lifestyle of students and the unfulfillment of the norms of required daily PA. To meet the minimum recommendations for weekly volume and frequency of PA, they would need to give it increased attention during their free time. And that is a question for our next contribution.

Keywords: Physical Activity, Sitting Time, Transportation, Walking

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Comparison of cardiovascular fitness and beep test performance in university students

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Introduction: Cardiovascular fitness is a significant indicator of overall health. Field tests such as the popular 20-meter shuttle run test, also known as the beep test, are used to determine the level of cardiovascular fitness. The aim of this study was to investigate the relationship between morning heart rate and performance in the 20-m shuttle run test, as well as to identify how theoretical values of aerobic and anaerobic thresholds affect performance.

Material and methods: We examined 76 male students from the Medical Faculty of Pavol Jozef Šafárik University in Slovakia (age 20±3). Participants manually recorded their morning heart rate over three days preceding the test, discussing potential limitations of this method with them. Using the Karvonen formula, we calculated the theoretical values of aerobic and anaerobic thresholds.

Results: We found a mild negative correlation (-0.15) between morning heart rate and the number of completed segments, suggesting that a lower morning heart rate may relate to better performance in the test. The average morning heart rate was 66 beats per minute, which is higher compared to other studies (50-55 beats per minute), potentially indicating differences in measurement methodology or variability in the population. The time to reach the anaerobic threshold showed a moderately strong positive correlation (0.24) with the number of completed segments, indicating better performance among students who reached the anaerobic threshold later. Participants achieved approximately the same VO₂max results (42.95 ml/kg/min) as those found in other studies, suggesting consistency in our measurement of maximum aerobic capacity with existing data.

Conclusions: To improve performance in the beep test, we propose the introduction of behavioral interventions, such as goal setting and motivational interviews, which could help students achieve their maximum potential in the test. These techniques should be implemented as part of the training process before the actual testing, with regular evaluation of their effectiveness.

Keywords: 20-Meter Shuttle Run Test, Resting Heart Rate, Aerobic Endurance, Maximal Oxygen Consumption

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Analysis of physical activity readiness in Eastern Slovakia university students amid the COVID-19 pandemic

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Introduction: The COVID-19 pandemic has significantly altered lifestyles worldwide, impacting physical activity and health habits. University students have faced unique challenges due to campus closures and online education, potentially affecting their physical and mental health. This study assesses physical activity readiness among UPJŠ and TUKE university students during these disruptions.

Material and methods: 1135 students from UPJŠ and TUKE completed the PAR(Q) - Physical Activity Readiness Questionnaire online during the 2021/2022 and 2022/2023 academic years in sports classes. The questionnaire included health questions (heart issues, chest pain, dizziness, high blood pressure, diabetes, asthma, joint problems, recent colds, prohibited high-intensity activity, family history of heart problems) and queries about pre-COVID-19 physical activity and its perceived pandemic impact. Responses were analysed by university and gender using descriptive analysis and the chi-square test of independence.

Results: The analysis revealed notable disparities in specific health outcomes that were influenced by both university affiliation and gender. Female TUKE students showed significantly higher rates of chest pain and dizziness ($p < 0.001$), and there was a notable increase in the occurrence of recent colds ($p = 0.012$). Conversely, UPJŠ females had a higher prevalence of familial heart issues ($p = 0.004$). While lacking statistical significance, additional health conditions such as high blood pressure, diabetes, asthma, joint problems, and prohibitions on high-intensity activities were also investigated. However, no specific pattern of variation between the groups was observed. The participants' physical activity responses to the pandemic varied significantly ($p = 0.011$). Individuals with higher levels of physical activity prior to the pandemic, specifically females from TUKE and males from UPJŠ, experienced distinct impacts compared to those who were less active. This is supported by the observed interaction effects, which have a significance level of $p < 0.001$.

Conclusions: The study demonstrates that gender and university affiliation significantly influence health outcomes and physical activity during the COVID-19 pandemic. It highlights the need for targeted health interventions and underscores the protective role of regular physical activity in maintaining resilience against health disruptions.

Keywords: PAR-Q, Students Health, Behavioural Adaptation, Pandemic Impact

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Potential effects of Finnish sauna use in the process of improving body composition characteristics

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Introduction: The aim of this study was to determine the effect of repeated alternative thermal stress on the physiological parameters of young women sporadically used sauna.

Material and methods: Twenty young women (age: 24.2±2.1 years) were exposed to four sauna sessions of 12 minutes each (temperature: 90-91°C, humidity: 14-16 %) with four 6-minute cool-down breaks including 2-minute cold water immersion (temperature: 9-11°C). Physiological characteristics were monitored before and after the 72-minute experiment. Systolic and diastolic blood pressures (systolic - SBP, diastolic - DBP), heart rate (HR), forehead temperature, and body composition were determined on each subject and dependent t-test were performed on each variable.

Results: During the 72-minute experiment forehead temperature increased significantly ($p<0.001$). A significant decrease was observed in DBP ($p=0.045$), body mass ($p<0.001$), minerals ($p=0.01$), body fat mass ($p=0.035$), BMI ($p<0.001$), waist to hip ratio ($p=0.042$), visceral fat level ($p=0.004$) and obesity degree ($p=0.044$) during four successive 12-minute sauna sessions.

Conclusions: Seventy-two minutes of alternating (hot and cold) repeated thermal stress has a significant effect on lowering values of DBP, and body composition (body mass, BMI, body fat mass and minerals) characteristics. Two-minute cold water immersions used during the 6-minute break allow you to significantly cool the body and slow down metabolic processes, which gives you the opportunity to stay longer in the sauna with the simultaneous need to replenish fluids containing minerals. Relatively long stays in the sauna can be used to reduce the level of body fat in the human body.

Keywords: Thermal Stress, Alternative Environment, University Female Students, Physiological Effects, Body Composition

Changes in somatic indicators and health-oriented fitness of boys and girls of younger school age

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Introduction: The aim of the research was to expand knowledge in the areas of monitoring somatic changes depending on indicators of health-oriented fitness in a 10-year-old school population of boys and girls.

Material and methods: An ex post facto study was applied. The sample consisted of a total of n=467 boys and girls, including 117 boys and 126 girls in 2002 and 104 boys and 118 girls in 2022 from elementary schools in the city of Banská Bystrica (BB). Standardized methods of measurement and testing applicable to school practice were used to obtain the data. Differences between the groups of boys and girls were examined using the statistical methods Kruskal-Wallis H-test and Mann-Whitney U-test. The identified differences were evaluated at a 5% ($p < 0.05$) level of statistical significance.

Results: When comparing differences in the average BMI index, we found a significant difference (BMI index 7.19) ($p < 0.05$) ($H=11.71$, $p=0.0006$) between boys from the elementary school in BB in 2002 and 2022, to the disadvantage of boys in 2022. We observed a similar increase in the BMI index (BMI index 1.25) in girls in 2022 when comparing the average body mass index ($H=0.0313$, $p=0.8595$), which, however, was not significant. We evaluated health-oriented fitness using the Ruffier test. We found a significant difference (Ruffier index 4.79) ($p < 0.05$) ($H=21.047$, $p=0.00001$) between boys from the elementary school in BB in 2002 and 2022, indicating a decrease in boys' fitness in 2022. Similarly, we found a significant difference (Ruffier test index 4.59) ($p < 0.05$) ($H=21.047$, $p=0.00001$) between girls from the elementary school in BB in 2002 and 2022, indicating a decrease in girls' fitness in 2022. When comparing the average values of aerobic endurance in the Beep test, we found a significant difference (Beep test 4.27) ($p < 0.05$) ($H=12.348$, $p=0.0016$) between boys from the elementary school in BB in 2002 and 2022, indicating a decrease in aerobic endurance in boys in 2022. A decrease in aerobic capacity was also noted when comparing girls from 2002 and 2022. In 2022, girls showed significantly worse results ($p < 0.05$) ($H=5.752$, $p=0.00044$).

Conclusions: These findings point to a declining and deteriorating trend in health-oriented fitness and BMI among both boys and girls.

Keywords: Health-Oriented Fitness, Index BMI, Ruffier Test, Beep Test

Funding: The listed study is the part of research project VEGA "1/0427/22 Prevention of pupils' postural health by physical activity".

Motivating Active Lifestyles: An Interdisciplinary Approach to Encourage Physical and Sports Activities

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Introduction: Physical activities and sports play an integral role in maintaining good health and well-being. Extensive research and data have shown that engaging in regular physical activity can have several benefits on both physical and mental health. The aim of this research is to explore the influence of various factors including policies in different areas, legal framework, education system, spatial planning, architecture, etc. on people's motivation to engage in physical and sports activities. The interdisciplinary study aims to identify barriers and facilitators in the built environment that influence physical activity levels, and to propose recommendations for policies that encourage active lifestyles.

Material and methods: We plan to use the following methods for our research:

Literature Review | To conduct a comprehensive review of existing literature on the impact of various factors on physical activity levels and sports participation.

Surveys and Interviews | To conduct surveys and interviews to understand people's motivations and barriers to physical and sports activities. These will also explore individuals' perceptions of the impact of their physical environment on their activity levels.

Case Studies | To identify and study countries, regions or cities that have successfully used various measures to promote physical and sports activities.

Data Analysis | To analyse the data gathered from surveys, interviews, and case studies to draw correlations and identify patterns.

Results: As a result of this project, we expect to reach the following objectives: to understand the relationship between various factors and physical activity levels; to explore the factors that motivate individuals to engage in physical and sports activities; and finally, to propose guidelines for policy-making in various fields that encourage active lifestyles.

Conclusions: Based on the findings, we plan to propose policies and recommendations that can enhance the motivation for physical and sports activities.

Keywords: Active Lifestyle, Physical and Mental Health, Physical and Sport Activities, Well-Being



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Does finger hang provide a valid estimate of finger flexor endurance in differing ability groups of sport climbers?

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Introduction: The finger hang test (FH) is a generally acknowledged measurement in sport climbing and a very good predictor of self-reported climbing ability. The test has been used in several training intervention studies to assess changes in endurance capacity of climbers. Many studies report very high reliability. However, the validity of finger hang test to assess finger flexor endurance has been questioned due to the effect of climber's body mass and maximal finger strength on the exercise intensity or due to the lack of ecological validity with respect to intermittent nature of finger flexor contractions during climbing. Therefore, this test may not be a valid reflection of finger flexors endurance. Can finger hang accurately evaluate finger flexor endurance?

Material and methods: A total of 309 sport climbers volunteered to take part in the study (186 males: mean age 27 ± 11.5 years, 123 females: age 23.3 ± 9.7 years). To determine whether the finger hang primarily measures climbers' endurance or maximal strength, four tests during one laboratory visit were completed: 1) maximal voluntary contraction (MVC) for both dominant and non-dominant; 2) sustained contraction endurance test at 60% MVC using non-dominant hand (CT); 3) intermittent contraction endurance test using the dominant hand at 60 % MVC 8:2 work&rest ratio (IT); 4) finger hang test (FH).

Results: The finger hang shows the strongest correlation ($r = 0.787$; $r = 0.789$) with the MVC for both male and female climbers across to climbing ability levels. While endurance tests demonstrate moderate correlations ($r = 0.730$; $r = 0.580$) with intermittent and ($r = 0.580$; $r = 0.529$) continuous tests, for male and female climbers, respectively. However, there is a weaker correlation between FH and MVC, IT, and CT among male climbers with better climbing ability ($r = 0.786$; $r = 0.704$; $r = 0.459$ for Advanced and Intermediate, $r = 0.482$; $r = 0.321$; $r = 0.318$ for Elite and Higher Elite). The female trend is opposite $r = 0.646$; $r = 0.437$; $r = 0.438$ for Advanced and Intermediate, $r = 0.741$; $r = 0.604$; $r = 0.529$ for Elite and Higher Elite).

Conclusions: Finger hangs are not suitable to assess finger endurance in climbers. The test serves as an accurate indicator of MVC for climbers ranging from beginners to elite level.

Keywords: Finger Hang, Endurance, Finger Flexor, Sport Climbing

Evaluation of visual search indices in relation to the sports skill level: preliminary investigation

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Introduction: To improve the level of achievements that ensure success in team sports, it is of paramount importance to develop solutions that increase the efficiency of the mechanisms determining the athlete's effectiveness. The aim of the present study was to analyze visual search indices under conditions that interfere with attention among volleyball players.

Material and methods: The study group consisted of students who were members of the Academic Sports Association, representing the university in intercollegiate league competitions at provincial and national levels. The control group was students from the University of Szczecin majoring in sports diagnostics with no volleyball training experience. The participant's task was to find a specific symbol among other objects using computer software. The VisualSearch program was used for this purpose. To approximate the conditions for performing the test to those observed during real sports tournaments, the test was conducted in a sports hall during volleyball training.

Results: Statistical analysis showed no statistically significant differences between the groups ($p > 0.05$) for indices of reaction time (RT): RT - target presents trials correct [ms]; RT - target absent trials correct [ms]; RT - target presents trials incorrect [ms], All RT - target presents [ms], All RT - target absent [ms]. Furthermore, statistical analysis of performance accuracy indices (all correct answers, accuracy - target absent, accuracy - target present) showed no differences between the two groups ($p > 0.05$).

Conclusions: No significant differences were found in the study in visual search rates depending on the sports skill level of the players. However, due to the small study group and other limitations of this study, one should be cautious when drawing conclusions. The results need to be verified by further more comprehensive research. It is worth emphasizing that this was a pilot study. The specification of the study shows the potential of using VisualSearch program to improve visual search and focus of attention in athletes.

Keywords: visual search, reaction time, volleyball

Environmental literacy of adults about the state of the environment, impact on health and physical activity

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Introduction: We pointed out environmental risks, including contaminants in individual components of the environment in Slovakia and their impact on health, on the symbiosis of physical activity (PA) with the environment, as well as the need to preserve a healthy planet in the context of opportunities. perform sports activities in a natural environment.

Material and methods: The research part consisted of 121 respondents. Empirical data collection was carried out through online research questions designed by us in the form of a non-standard Google Forms questionnaire.

Results: the majority of respondents are fundamentally influenced by the issue of the environment, but despite strong digitization, they are insufficiently aware of its overall condition in the Slovak Republic. This result is surprising considering that the respondents generally have a relatively good awareness of the possible health risks arising from a polluted environment. On the other hand, most respondents perform outdoor activities several times a week and, in this context, are more interested in the state of the environment where they perform PA, which was also confirmed by the respondents' knowledge of the occurrence of harmful air pollutants in their surroundings.

Conclusions: Our findings provided an interesting overall view of the issue and, in particular, an insight into the mindset of the respondents. The reasons why this is so would have to be the subject of further studies.

Keywords: Environmental Factors, Health, Risks, Physical Activity

Recommended physical activity in neurodegenerative diseases

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Introduction: Given the neuroprotective effects of physical activity (PA) on brain function for health and disease prevention, PA plays a crucial role in neurological conditions. Active individuals utilize brain resources more effectively during motor tasks than sedentary peers of similar age. Studies indicate delayed cognitive decline and reduced risk of depression, as well as notable enhancements in memory, associative abilities, and logical thinking with aerobic exercise. The study aimed to analyze existing literature recommendations regarding PA in neurological diseases.

Material and methods: A systematic literature review was conducted to achieve the study's aim. The focus was on anticoagulation recommendations for the most common neurological diseases (multiple sclerosis, Parkinson's disease, dementia syndromes, stroke, migraine headaches). Randomized studies and meta-analyses available in PubMed, Scopus, and Web of Science were analyzed.

Results: The assessment of the impact of PA on the nervous system is a complex issue stemming from the fact that the nervous system interacts with all anatomical structures, including joints, muscles, and internal organs. Activation of motor units, maintenance of motor memory and deep sensation, shaping and preservation of motor coordination, including balance, and activation of subcortical and cortical centers are the most frequently mentioned benefits of targeted PA. It is assumed that systematic PA in neurological disorders helps maintain emotional balance and intellectual abilities and prevents aging of the nervous system by keeping its functioning at an appropriate level.

Conclusions: PA in neurological diseases should be targeted, personalized, and tailored to the specific disease entity and its stage of advancement. Coexisting conditions and individual capabilities of the exercising individual should be taken into account. Systematic and targeted physical activity is a potent biological stimulator among human physical and mental health determinants. It stimulates the release of neurotrophins in the central nervous system, which are responsible for neurogenesis, angiogenesis, and synaptogenesis processes. Neurotrophins influence brain plasticity by regulating neuron differentiation and survival, thus impacting cognitive processes.

Keywords: Physical Activity, Neurodegenerative Disease, Recommendation

Analysis of Injuries in Football

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Introduction: The goal of the work was to find out the most common injuries in football among younger players and to evaluate the relationships between the selected variables using correlation analysis. Based on the claims and studies of Smith et al. (2016), Maffulli et al. (2010), Kirkendall and Sayers (2020), we established hypotheses for the given issue.

Hypothesis H1: The most common injuries are sprains or strains in the lower limbs.

Hypothesis H2: The most frequently injured part of the body is the ankle.

Hypothesis H3: There is a correlation of injury with the time interval in the last third of the second half of the match, with a moderate degree of dependence.

Material and methods: Using a questionnaire, we approached 97 football players from the clubs ŠK Slovan Bratislava, FC Nitra and FC ViOn Zlaté Moravce – Vráble. The players were aged 13-15 and during the observed period they played in the highest Slovak competition in the U14 and U15 categories.

Results: We found that the most common injuries among young players are lower limb injuries, especially torn ligaments, tendons in the ankle or sprained ankle. The most common cause of injury was a fight/foul and too early return to the training/match cycle. Using correlation analysis, we evaluated the relationships between the selected variables. The dependencies of injuries and time intervals had a weak or moderate degree of dependence. The most common reaction after the injury was anger.

Conclusions: Based on the results, we recommended coaches and parents to document injuries, possible causes and consequences of injuries of their wards, due to the negative impact on the psyche and to guide players to fair play.

Keywords: Injuries, Football, Analysis

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Extracurricular physical education organization in general secondary education in the context of war

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Introduction: The execution of this research work allowed substantiating the expediency of arranging individual fitness and sports tourism sessions for extracurricular activities of senior high school students, based on the morpho-functional features of youth and maximally realized through their motivation. On this basis, an algorithm for programming physical activities during fitness and sports tourism sessions was developed to maintain and strengthen the health of education seekers.

Material and methods: The research methodology involved theoretical analysis and synthesis of literary sources and scientific data through the study of scientific and methodological literature; pedagogical research methods; methods of socio-psychological research; pedagogical testing and surveying.

Results: Extracurricular fitness and sports tourism sessions were conducted with education seekers. They were also introduced to Cheerleading, Floorball, and Frisbee modules. Students' knowledge of leading a healthy lifestyle and organizing independent physical activities was reinforced. Independent performance of physical exercises by senior high school students aimed at improvement or development of physical qualities contributed to familiarization with methods of controlling their actions and assessing the correctness of their execution. Based on the analysis and comparison of their own muscle sensations, students determined the difference in the effectiveness of a specific physical exercise (when changing its execution options). For example, bending and straightening arms in a prone position with variations in arm placement, wrist position, leg height, and hip joint angle. The central point of teaching students to engage in physical exercises independently was acquiring skills and techniques in organizing and implementing independent activities. High school students were involved in independently selecting exercises, determining the optimal number of repetitions. When selecting physical exercises, their direction, duration of execution, and accessibility were clearly defined. Performing physical exercises aimed at developing physical qualities, strengthening major muscle groups, and forming correct posture.

Conclusions: As a result of the experimental research, we concluded that motivation plays a significant role in the physical development of children. Teachers should involve parents in conducting various sports events at school, which contributes to forming active motivation for achieving excellence in a child at each stage of their development. Similarly, schoolchildren develop a strong desire for systematic physical education and sports. Thus, successful implementation of the set tasks to improve the mental and physical performance of students is possible only through the initiative and creative cooperation of the school and the family.

Keywords: Secondary Education, Extracurricular Physical Education, War

Women's sport in Poland in "Przegląd Sportowy" in the years 1921-1939

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The aim of the article is to present women's sports in Poland in the "Przegląd Sportowy" magazine in the years 1921-1939. "Przegląd Sportowy" was devoted to current sports events in Poland and abroad. He presented various aspects of the women's sports movement. "Przegląd Sportowy" was a nationwide sports newspaper. It was published in the years 1921–1939. The first issue was published on May 21, 1921 in Kraków. From 1925, "Przegląd Sportowy" was published in Warsaw. It was founded as a weekly, and from 1929 it was published twice a week. It was the official press organ of the Polish Sports Associations. "Przegląd Sportowy" was devoted to current sports events in Poland and abroad. He also presented various aspects of the women's sports movement. Its role included information, promotion and promotion of women's sports in Poland. The volume of this richly illustrated magazine was usually 6 pages.

"Przegląd Sportowy" popularized women's sports in Poland through reports, materials and articles on the conditions of women's sports and sports competition in the local, regional, national and international arena. Women were active in the organizational structures of sports in Poland (including sitting on the boards of sports clubs and societies), serving as trainers and physical education instructors. They participated in sports camps organized by Polish sports associations. The magazine published information on women's sports achievements on the national and international arena. The most common sports disciplines practiced by women in Poland in the period in question were: gymnastics, sports games and athletics. Ladies also practiced other sports: kayaking, archery, skating (figure skating and speed skating), skiing, swimming, luge, fencing, tennis and rowing. According to the magazine, the sports level of women in Poland was varied.

Their greatest successes on the international arena were achieved in athletics, archery, skiing and tennis. The best women in sports in the interwar period included: Jadwiga Jędrzejowska, Halina Konopacka, Janina Kurkowska-Spychajowa, Maria Kwaśniewska, Jadwiga Wajs and Stanisława Walasiewicz and Wanda Dubieńska, Róża Kajzer, Janina Lotczkova, Elżbieta Michalewska-Ziętkiewiczowa, Zofia Nehring, Irena Popielówna, Bronisława Staszczak-Polankowa. These successes were related to the development of sports contacts of Polish representatives on the international arena and the activities of the International Women's Sports Federation. The Federation worked to develop and promote physical activity among women.

Keywords: Sports Press, Women's Sports, Poland, Interwar Period

The Relationship between body composition, vertical jump performance and peak anaerobic power in male volleyball players

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Introduction: The most commonly used tests for assessing explosive strength of the legs and jumping ability are the squad jump (SJ) and countermovement jump (CMJ). The SJ and CMJ tests are a simple, practical, valid, and very reliable measure of the lower body power. Vertical jump (VJ) performance is affected by various anthropometric and body composition (BC) characteristics. The purpose of the study is to determine the relationship between, anthropometric indicators, BC, VJ and peak anaerobic power (PAP) estimated based on jump height and body mass (Sayer's formula) in group of male volleyball players. Additionally, the performance of different types of vertical jumps was compared (SJ, CMJ with and without arm swing). Research questions were: 1) Is there significant correlation between anthropometric indicator (AI), BC, VJ performance and PAP?; 2) How is different between SJ, CMJ without and CMJ with arms swing?

Material and methods: 13 second league male volleyball players ($21,8 \pm 2,8$ yrs, body height (BH)- $190,4 \text{ cm} \pm 6,4 \text{ cm}$, body mass (BM)- $85,03 \pm 9,55 \text{ kg}$, BMI $23,25 \pm 1,66$) participated in the study. Body fat (BF%), muscle mass (MM%), Fat Free Mass (FFM kg) were assessed using the BIA electronic scale TANITA MC-780. "Sport" mode was applied. Body height (BH), and length of lower extremities (LLE) was measured using the Martin's anthropometer. Optojump (Microgate, Italy) was used for vertical jump assessment. The Sayer's formula was used to estimate the peak anaerobic power (PAP).

Results: There was no significant relationship between AI, BC and VJ. Significant difference between SJ and CMJ with swing arms was found. VJ results are closely correlated with PAP. The correlation matrix showed that PAP was in a high significant correlation with most of the predictor variables (BH, BM, BMI, FFM, LLE).

Conclusions: BC, especially FFM and BF should be evaluated for volleyball players. LLE is importance for the jumping performance in volleyball. Vertical jump is a reliable predictor of lower limb anaerobic power. BM should be considered to determine PAP. Arm swing significantly affects the VJ performance. For future studies, the number of subjects must be increased.

Keywords: Volleyball, Body Composition, Vertical Jump, Peak Power

Evaluation of the impact force of the side and turning kick of taekwon-do athletes

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Introduction: Taekwondo is not only a form of sport and martial art, but also an activity that demonstrates physical, mental and technical abilities. Among the many elements that define effectiveness in martial arts is striking power, which plays a key role in combat effectiveness. Therefore, the purpose of this research was to evaluate the strength of the roundhouse kick and side kick in the context of gender and lateralization.

Material and methods: Nine 18-year-old ITF (International Taekwon-do Federation) taekwon-do athletes participated in the study: four males (age: 28.5 ± 6.5 years; weight: 77.5 ± 6.1 kg; height: 180.0 ± 1.4 cm) and five females (age: 27.0 ± 4.8 years; weight: 64.2 ± 5.8 kg; height: 163.0 ± 6.5 cm). To record the impact force, a strain gauge platform was used as a target, padded with a training disc to protect the participants from direct impact on the force plate, mounted on a stable structure (AMTI, model MC12-2K, 2000 series synchronized with Noraxon MR3 3.18 software).

Results: Significant differences were noted between the right and left legs in average force values within this selected kick ($p < 0.01$). On average, the side kick achieves higher force values than the roundhouse kick ($F = 495.55$; $p < 0.001$). Significant elements differentiating kick force values are gender, type of kick and leg used (right or left). Kick strength correlates with gender ($r = 0.60$; $p < 0.05$), body weight ($r = 0.52$; $p < 0.05$) and moderately with type of kick ($r = 0.40$; $p < 0.05$). It can be noted that some women, after specialized training, are able to obtain higher kick strength values than some men.

Conclusions: Our research shows that side kick achieves higher force values on average than turning kick. Nevertheless, the results of other researchers show that athletes most often use turning kick in sports combat. So other aspects must determine the choice of technical arsenal in this type of competition

Keywords: Martial Arts, Taekwon-do, Force of Kick, Kick Strength, Side Kick, Turning Kick

Measurement of the vaginal pressure profile during selected sports activities

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Introduction: The Femfit[®] (version 3.0) is a pressure sensor array designed to measure intravaginal (IVP) and intraabdominal (IAP) pressure simultaneously (ref). It consists of eight pressure sensors that measure pelvic floor activation pressure (sensors 1-6) and abdominal pressure (sensors 7–8). The primary aim of this study was to measure IVP and IAP using Femfit[®] during selected sports activities in female elite athletes with and without stress urinary incontinence (SUI) and determine if there was a difference between the two groups.

Material and methods: Five female elite athletes with SUI and five female elite athletes without SUI were included from local sports clubs. The FemFit[®] measurements of IVP and IAP pressures were carried out during the following sports activities: jumps on the ground, jumps on trampolines, weightlifting, slow running, and fast running. The International Consultation on Incontinence Questionnaire was also used for SUI.

Results: The highest IVP (53.7 ± 21.6 mmHg) and IAT (59.6 ± 14.3 mmHg) pressures were recorded during ground jumps, followed by trampoline. Mean IVP (24.7 ± 8.1 mmHg) and IAT (27.1 ± 6.8 mmHg) pressures were measured during fast and slow running. In contrast, the lowest pressures were found during weightlifting (11.6 ± 4.0 mmHg) and (10.3 ± 2.5 mmHg). During all activities tested, IVP and IAT in the group without SUI were higher than in the group with SUI, but the differences were not significant.

Conclusions: The FemFit[®] pressure measurement during sports activities revealed lower IVP in the female elite athletes with SUI.

Keywords: FemFit[®], Elite Athletes, Urinary Incontinence

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Levels of quality of life, aerobic endurance and physical parameters in 15-19 year old adolescents

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Introduction: The aim of our paper is the quality of life issues and their relationship with aerobic endurance and physical parameters in 15-19 year old adolescents.

Material and methods: 568 adolescents aged 15-19 years from different types of secondary schools in Slovakia were included in the study. Subjective variables were obtained using selected questions from the questionnaire "Health, related behaviors of adolescents and possibilities of prevention from civilization diseases". The assessment of aerobic endurance was performed using the Beep test. Body parameters were measured using bioimpedance analysis (BIA) body composition analysis with the InBody 770 (Biospace Co., Ltd.). Differences between independent groups were assessed by Mann-Whitney U test and the substantive significance was assessed by the coefficient "r" (Cohen, 1962).

Results: When differentiating between girls and boys spending time on the computer and with mobile devices up to 2 hours and over 2 hours, we found statistically significant differences in sedentary activities in both groups ($p < 0.01$). Differentiating between the sexes spending time on the computer and with mobile devices for up to 2 hours, we found statistically significant differences in substance use ($p < 0.01$), to the detriment of boys. Surprisingly, girls spending time on computer and social media up to 2 hrs showed a percentage of body fat above the permissible norm compared to those spending this time above 2 hrs.

Conclusions: Based on our analysis, we can conclude that there is a relationship between time spent in sedentary activities (computer and mobile device use), and quality of life in adolescents aged 15-19 years. This relationship is evident not only in physical parameters, but also in related behavioural aspects such as substance use.

Keywords: Physical Activity, Sedentary Activities, Physical Parameters, Aerobic Endurance

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Self-reported physical activity and aerobic endurance in Slovak female university students

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Introduction: Appropriately chosen physical activity (PA) is one of the most natural ways to promote physical and mental health in everyone's life. A general decline in recent decades has led to an increase in civilization-related diseases. Female college students are more prone to neglect PA compared to male students due to the demands of motherhood and the beginning of their careers. In this paper, we sought to answer the following research questions: Are there differences among female faculty students in their PA? Are there differences between female students of the faculties in VO₂ max? How much time do female students spend sitting during the weekend? What is the correlation between the PA and VO₂ max of participants?

Material and methods: This paper compares the PA of female undergraduates at the University of P. J. Šafárik in Košice (UPJŠ) to their actual aerobic endurance, based on our research findings. The study comprised 276 female students from five UPJŠ faculties. PA data were gathered using an extended version of the International Physical Activity Questionnaire (IPAQ). Aerobic endurance capacity was determined using the results of a 20 m multistage fitness test (beep-test), which was then converted to estimated VO₂ max values.

Results: Although the results are comparable to other studies when converted to MET (min/week), they did not prove a significant difference in the PA of undergraduate students between faculties. However, the measured aerobic endurance did not correspond to the declared PA. The level of PA among female UPJŠ students is like that observed in other studies. However, it is primarily characterised by lower intensity, which could potentially impact their aerobic performance.

Conclusions: The goal for the future remains to increase female students' interest in regular participation in PA of moderate and higher intensity, thus increasing their aerobic endurance and participating in the prevention of their health.

Keywords: Aerobic Endurance, Undergraduate Female Students, Metabolic Equivalents

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Features of servicemen`s stress resistance in the context of current challenges and threats under martial law

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Introduction: Military actions in Ukraine actualized an issue on post-traumatic stress disorder (PTSD). The prevalence of PTSD among persons who were in a war zone had reached 15-20%. It is also valuable to realize that for a significant part of people who have experienced a psychological trauma, the mental health disorders will not arise immediately, but may appear relatively soon.

Material and methods: 176 servicemen (12 female and 154 male persons) who study at the Hetman Petro Sahaidachny National Army Academy (Lviv, Ukraine) took part in the stress resistance study. The average age of the survey participants was 21.73 ± 2.84 years. The youngest participant was 18 years old, the oldest was 31 years old. 83% (146 people) of servicemen had a combatant status. The Kessler Psychological Distress Scale (K10) has been used with a purpose of psychological screening. This scale is recommended for measuring psychological stress among servicemen and law enforcement officers. Due to such scale it can be detected how often during the last month the respondent felt nervous, discouraged, exhausted, depressed, worthless. High scores indicate a high level of distress, relatively low scores indicate a low level of distress.

Results: The analysis of the obtained results made it possible to determine that more than half of the servicemen, in particular 119 people (67.6 %) felt good during the study. 33 respondents (18.8 %) recorded mild disorders, which should be paid attention to recovering their lost psychological resources. The servicemen who had values within 25-29 points made up 5.7% (10 people) of the entire sample. Such results may indicate the presence of post-traumatic disorder among this category of respondents. The results of 14 respondents (8%) recorded the result within 30 points and above, which may indicate serious psychological disorders, the correction of which requires the appropriate specialists` support.

Conclusions: More than half of the respondents feel good, but it is important to pay attention beforehand to those servicemen having values within 25 points and above, that is 13.7% of all respondents. After all, this indicates serious mental issues, the solution of which requires the qualified specialists` support. Thus, it is important to provide maintenance and access to professional psychological assistance for servicemen with different levels of mental status, in order to prevent the consequences of combat events and improve the quality of life of this population category.

Keywords: Servicemen, Stress Resistance, Psychological Distress

Football players' awareness of injury prevention strategies

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Introduction: Injuries occur during football games and practice due to high speeds and full contact. While overuse injuries can occur, traumatic injuries such as fractures and, sprains are most common. Many injuries among professional football players can be attributed to the lack of awareness of injury prevention strategies. The study aimed to determine football players' awareness of injury prevention strategies and their execution.

Material and methods: Slovak football club players participated in a questionnaire-based survey. The research group consisted of 52 fourth and fifth-league football players. A questionnaire developed by Richard D Hawkins and Colin W Fuller (1998) was used and supplemented with other questions to determine football players' awareness of injury prevention.

Results: More than half (52%) of the respondents, when asked whether they received information about the importance of strength training, said that they were sufficiently informed. When asked whether the respondents received information on how to eat before the match, almost half (46%) answered that they received little information. 22% of respondents answered that they did not receive information at all, and 32% had a lot of information. In response to whether football players received information about the importance of warm-up and cool-of, more than half (52.9%) answered that they received only partial information.

Conclusions: In conclusion, we found that most players have only basic knowledge about how to prevent or treat different types of injuries. At the same time, we found that lack of information can impact the player's performance and overall health. Based on the results, we recommend that football clubs secure regular training and inform players about serious injuries, prevention, and treatment

Keywords: Football Injuries, Knowledgeability, Prevention Strategies

Hidden shortcomings of balance training research in older adults: Scoping review

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Introduction: Although a lot of attention is paid to the flaws of balance training research in older adults, the low methodological quality and incomplete reporting of individual studies still limit the knowledge transfer between research and practice. These known methodological shortcomings are considered also as barriers to creating guidelines or recommendations for balance training in older adults. Despite considerable efforts to improve the scientific quality of studies, such recommendations have not yet been formulated to date. Therefore, this scoping review aims to analyse the literature that addresses balance training in apparently healthy older adults, and to identify and summarize gaps in the existing literature with the aim to propose future research on this topic.

Material and methods: The PRISMA Extension for Scoping Reviews standardized protocol was used as a methodological framework in this scoping review. The search was carried out through the Web of Science and Scopus databases. We focused on studies that evaluated the effect of balance training on different types of balance in apparently healthy older adults over 60 years of age.

Results: A total of 6910 potentially relevant studies were reviewed, of which 26 met the eligibility criteria. The main identified shortcomings were insufficiently described training protocol, missing a priori criteria for training session attendance and additional physical activity, absence of control group, and the diagnostic tools used very often do not reflect the trained type of balance.

Conclusions: Among the shortcomings of the balance training research, the insufficiently described balance training program can be considered the most important. For this reason, even with an excellently conducted experiment, it is almost impossible for practitioners to apply the results of such studies into practice. Therefore, researchers should pay more attention to possible users of the acquired knowledge, which is more than desirable in the case of exercise programs for older adults.

Keywords: Apparently Healthy Older Adults, Training Modalities, Training Protocol, Methodological Flaws

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The Contribution of psychomotoricity activities to the health and quality of life of social workers caring for the elderly – ERASMUS + project

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Caring for one's own health and quality of life is less important for social workers, who care for the elderly in many aspects, than caring for the elderly. We have trained 130 Czech and Slovak social workers and taught them psychomotoricity activities that lead to health and a better quality of life as part of the ERASMUS + international cooperation project entitled Education of Social Workers in elderly care through selected psychomotoricity activities. At the same time, we have verified their current stress, frustration tolerance and their attitude to personal quality of life as part of the project. Throughout our education, we simultaneously taught them how to take the best possible care of their health and how to use psychomotoricity activities for personal well-being. Research shows that appropriate psychomotoricity activities can have a very positive effect on the health not only of social workers and the elderly, but also of other employees of social facilities.

Keywords: Psychomotoricity, Social Workers, Quality of Life, Health

Sport in rural areas in Poland in 1918-1939

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The aim of the work is to present sport in rural Poland in the years 1918-1939. The vast majority of the society of the Second Polish Republic lived in rural areas. According to the census of September 30, 1921, Poland had 27,177,000 inhabitants, of which 20,250,000 lived in rural areas (75.4% of the population). However, according to the next census of 1938, Poland had 34,849 thousand inhabitants, of which 24,394 thousand (70% of the population) lived in the countryside.

The activities of the State Office of Physical Education and Military Training, mainly District and Municipal Committees for Physical Education and Military Training, played a significant role in popularizing and disseminating sport in rural areas. In the field of rural sports, training staff and sports infrastructure played an important role. Work on the sporting of rural areas, including the development of sports infrastructure, was intensified in Poland in the second half of the 1930s. The reason for these changes was not only the need to develop physical activity in rural communities, but also matters related to state defense.

Sport was implemented in public education in rural areas, as well as in agricultural schools. Some agricultural schools had sports sections and organized sports competitions. Sport was present in the activities of Rural People's Universities. In the interwar period, there were over 20 such institutions. The sports movement was present in the programs and activities of national and regional rural youth organizations. Sports teams were run by rural youth clubs. Rural youth participated in physical education and sports courses and participated in sports competitions, mainly at the regional level. The most popular sports disciplines included athletics, gymnastics and sports games.

In the rural environment, physical activity, including sports, was carried out in youth and social organizations, Catholic Youth Associations, the "Sokół" Gymnastic Society and the Shooting Association. Catholic Youth Associations and the Riflemen's Association were particularly active in the field of physical activity in the countryside. The activities included organizing physical education and sports courses and camps, sports teams and sports competitions. Rural youth participated in trials for the State Sports Badge and the Shooting Badge.

Keywords: Sport, Countryside, Poland, Interwar Period, Rural Youth Organizations

Association between physical activity level, body composition and phase angle in university students from Krosno

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Introduction: Unhealthy lifestyles are one the main causes of civilisation diseases. A low level of physical activity is the main reason for excessive body mass. Significant and sensitive indicator for assessing nutritional status is the phase angle (PhA) which indicates the health of the body's cells and the integrity of the cell membrane. Aim of the study is determining the relationship between selected components of body composition and the phase angle depending on the level of physical activity among students.

Material and methods: The study group consisted of 494 students from the State University of Applied Sciences in Krosno. The diagnostic survey method International Physical Activity Questionnaire - Short Form (IPAQ-SF), anthropometric measurements, and analysis of body composition components obtained applying a four-limb TANITA MC-780 SMA analyzer (BIA) were used.

Results: A higher level of phase angle (PhA) among the participants was associated with a higher level of physical activity assessed based on IPAQ-SF. It has been observed that with higher levels of BMI, FFM, muscle mass, and sarcopenic index, there is a higher level of phase angle. The most pronounced associations were observed when considering the sarcopenic index and FFM. Among the participants, 28.1% did not engage in any physical activity or their level was insufficient. Among various forms of leisure activities, computer screen time was most frequently chosen by computer science students. The correlation between higher levels of physical activity and phase angle values was statistically significant.

Conclusions: Quality cell membrane and health of body cells depend on the level of physical activity and specific body composition. Preventive actions and educational programs should be particularly targeted at students of disciplines with a significant amount of sedentary classes.

Keywords: Students, Physical Activity, Phase Angle, BIA, IPAQ-SF

Body mass index and cardiorespiratory endurance of 15-19-year-old girls from the Polish-Ukrainian borderland

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Introduction: Overweight and obesity constitute a global health issue prevalent across all age groups of the youth population. Excess body weight leads to the development of numerous complications, including metabolic ones, increasing the risk of chronic diseases. An increasingly preferred sedentary lifestyle among young people leads to a decline in cardiorespiratory endurance, which is one of the factors contributing to the development of excess body weight.

Material and methods: The research was conducted in 2014. The project involved 429 girls, aged 15-19, from 6 Polish and 5 Ukrainian schools. Body mass index (BMI) was calculated using an anthropometer and the Tanita TBF-300 device. The categorization of BMI for adolescents aged 15-19 was conducted based on percentile charts derived from the World Health Organization guidelines. The Beep Test was utilized to assess cardiorespiratory endurance, enabling an indirect evaluation of VO₂max (ml/kg/min).

Results: Among the surveyed youth, the largest group consisted of individuals with a normal body weight (PL 88.9%, UA 91.9%). More girls with overweight and obesity were found in the Polish group (7.9%) than in the Ukrainian group (3.7%). The young people from Poland achieved better results in the running test, with the diagnosed VO₂max for Polish girls averaging 35.9 ± 5.3 ml/kg/min compared to 33.7 ± 5.2 ml/kg/min for girls from Ukraine. The largest group of young Polish women covered a distance between 750–1000 meters, while Ukrainians covered 500–750 meters. The level of cardiorespiratory endurance decreased with increasing BMI in both studied groups; however, these correlations were not statistically significant. The comparison of cardiorespiratory endurance test results with the occurrence of overweight/obesity in the studied population revealed that girls with excess body weight showed poorer performance, although statistically significant only in the group from Poland.

Conclusions: In the examined group of adolescents from the Polish-Ukrainian borderland, girls with normal body weight predominated, while the level of cardiovascular and respiratory endurance decreased with increasing BMI.

Keywords: BMI, Cardiorespiratory Endurance, Excessive Weight, Body Physical Activity, Girls

The level of health behaviours of Polish University students - a cross-sectional multicenter study

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Introduction: Health behaviours are those whose frequency and intensity are not indifferent to health. It is estimated that individual behaviours are a factor that increases the risk of premature death by 40%. Regularly conducted studies that monitor pro- and anti-health behaviors of the population make it possible to manage the so-called health risk of civilization diseases properly. The University study period is most often associated with new conditions and changes in the lifestyle of young people. Scientific reports indicate an increase in adverse health behaviours during this period. This study aims to determine the level of health behavior of academic youth studying in selected universities in Poland.

Material and methods: The study involved 1097 students, from five universities with a diverse range of faculties, of which 55.6% were female. The age of the respondents was 17-32. The vast majority (96.1%) were 18-23 years old. A standardized research tool, the Health Behavior Inventory, according to Z. Juczynski's adaptation, and an author's questionnaire survey were used to assess health behaviors, and anthropometric measurements of height, weight, and body composition were taken, and BMI was calculated. The significance of differences was assessed using the Mann-Whitney test. The significance level of $p < 0.05$ was assumed.

Results: The study showed significantly lower assessments of the general index of health behaviours among male students ($p < 0.0000$). Only 17% of all respondents were classified into the group with a high level of health behaviours. Nearly 35% of the surveyed academic youth are characterized by a low level of health-promoting behaviours. Among the analysed categories of health behaviours, the respondents obtained the lowest average score regarding proper eating habits and preventive behaviours. Every fifth person has a too-high BMI. In self-assessment of health, only 25% of the respondents rate it as very good. Among the surveyed university students, 44% declare they do not engage in leisure-time physical activity.

Conclusions: Our study's results indicate the need for programmatic educational activities among Polish university students in the field of health, including pro-healthy lifestyles. Particular attention should be paid to healthy eating habits and preventive behavior, as well as promoting participation in leisure-time physical activity.

Keywords: Health Behaviours, Lifestyle Physical Activity, University Students, Health Promotion

Body composition of women practicing yoga and training Zumba - a comparative analysis

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Introduction: Yoga is a 3000-year-old discipline for examining human nature and calming the mind. Nowadays, yoga is frequently considered only a physical activity for taking care of the body and mental well-being. There are scientific studies that prove that yoga contributes to a reduction in anthropometric measurements and indicators, such as body weight, waist circumference, hip circumference and BMI. For research purposes, it was interesting to obtain information on the body composition of women practicing yoga and to compare it with that of women who participate in other, very different from yoga, types of physical activities. For this purpose, Zumba was chosen. It is a combination of elements of aerobic interval training and strengthening exercises, which helps to burn calories, improves the cardiovascular system and strengthens the whole body.

Material and methods: The study involved 96 women: 56 yoga practitioners, 38 Zumba participants. The subjects were surveyed with a questionnaire to elicit information about their socioeconomic status. Body composition was determined by bioelectrical impedance analysis (BIA) using an InBody 270 analyser. Differences were assessed with two-tailed chi-square tests and Student's t-tests.

Results: The yoga practitioners were significantly older than those practicing Zumba ($p < 0.001$). Most of the respondents regularly participated in yoga/Zumba classes once or twice a week. More than half of the subjects adhered to a diet; yoga practitioners chose vegetarian (29%) and vegan (13%) diets more often than Zumba practitioners. Yoga participants had a higher BMI than Zumba participants (24.19 vs. 23.43), but they had a lower percentage of fat (28.84% vs. 29.89%), a higher fat free mass (47.08 kg vs. 44.13 kg), a lower visceral fat level (8.45 vs. 9.13), and a lesser degree of obesity (112.61% vs. 114.95%). The difference in InBody Scores was on the threshold of statistical significance ($p = 0.051$).

Conclusions: Although the differences were not statistically significant, the mean values of the body composition indicators of the yoga practitioners were superior to those of the Zumba practitioners. Despite their higher BMI, yoga practitioners had a slightly more favorable body composition, which may indicate that yoga positively affects individual body components and body shape.

Keywords: Yoga, Zumba, Physical Activity, Body Composition

Young people of Krakow's primary and secondary schools and active forms of tourism

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Introduction: In promoting physical activity, tourism plays a very important role, moreover, the role of tourism is growing every year. There are many forms of tourism and almost every participant can choose something for himself. Among the various forms of tourism, the distinguishing feature of active tourism is that its participants undertake all forms of physical recreation. The purpose of this study is to determine the extent and level of tourist activity among young people of Krakow elementary and secondary schools depending on the type of school, gender and parents' education? What forms of active tourism (class trips, individually, with family, friends, tourist organization) are most often practiced by young people?

Material and methods: The study used the diagnostic survey method and the research technique was surveys. The surveys were anonymous and the sampling was random. The survey covered 1,250 students from four types of schools. The level of education included: low - 457 families, medium - 595 families and high - 198 families.

Results: The most popular form of tourism is travelling with friends - 30.3%. Tourism practiced with family was also frequently indicated - 25.8%. Among informal forms of tourism, individual tourism was the least popular - 8.1%. The formal way of undertaking tourism activities is the least numerous. Young people rarely indicate activity in the framework of class trips (3.7%) or excursions within school organizations (5.5%). Extracurricular organizations provide opportunities to practice active forms of tourism for only 2.9% of young people.

Conclusions: Taking up tourist activities organized independently, at school and in extracurricular institutions among the youth of Krakow's elementary and secondary schools is 56,1%. At the low level of tourist activity, girls dominate over boys, at the medium and high levels the differences are negligible. The practice of active forms of tourism varies according to the type of school.

Keywords: Physical Activity, Forms of Tourism, Schoolchildren

Psychomotor games and their application in school-aged children at first-level primary schools

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Introduction: The aim of this paper is to analyse the application of psychomotor games in children's school clubs in selected primary schools. The school is in the position of coordinator of pupils' free time activities, providing a number of opportunities for the implementation of leisure time activities. The mission of school children's clubs (SCC) is to develop children's personal potential, interests and learning needs in a supportive environment applying the requirements of education outside the classroom, through the principles of non-formal education. Psychomotor games are distinguished from other games mainly by the use of non-traditional equipment and the important aspect is that there is no winner and no loser.

Material and methods: To collect empirical data, we used a questionnaire on the application of psychomotor games, which was addressed to educators in a SCC. 31 educators from three primary schools completed the questionnaire anonymously. The survey was conducted during the spring of 2023. Data were collected from respondents using an online tool, Google Forms. The questionnaire battery consisted of 16 questions, 4 of which included demographic information, 11 questions were closed-ended and inquired about the manner, frequency, and means of implementation of psychomotor games, and 1 question for open-ended opinion on the issue.

Results: Survey results confirmed the high rate of use of psychomotor games in the SCC program (97% of respondents). They are used most frequently during recreational (74%), leisure (58%) and least frequently during leisure (42%) activities at SCC. More than 2 thirds of the caregivers use typical psychomotor equipment from everyday objects (as balloons, cups, bandanas, etc), among atypical psychomotor equipment such as parachutes, etc. Their regular application led to an increase in motivation and a feeling of satisfaction among the children.

Conclusions: Psychomotor activities inspire play, develop children's imagination and fantasy. Increasing the amount of play in SCC during leisure activities can lead to better development of movements, senses and cognitive functions. Psychomotor activities that inspire them to play and to develop their imagination. Creative play should be combined with recreational activities that help pupils to relax and unwind. In SCC it is desirable to incorporate competitive activities, developing speed, agility, concentration, observation and other qualities of the child.

Keywords: Younger School Age, Psychomotor Skills, Playtime, Psychomotor equipment, School Children's Club, Non-Traditional Equipment

Women's activity in the Olympic movement from 1896 to 1936

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Introduction: Women – from the earliest times – had to fight for the opportunity to participate in sport. In ancient times, they were not allowed to enter the sanctuary at Olympia. They organised the heraje – the women's games in honour of the goddess Hera. Similarly in modern times. Pierre de Coubertin did not invite women to compete in the Olympics. Women won the right to participate in the Games themselves.

Material and methods: The author conducted research in the Library of the International Olympic Academy, the Library of the Olympic Museum in Lausanne and archives and libraries in Poland. The author used historical research methods to compile the collected material. The aim of the research was to analyse the activities and achievements of women in the Olympic movement between 1896 and 1936.

Results: In the pioneering period of the development of the modern Olympic movement, there was no place for women. In the programme of the first Games in Athens in 1896, there was no competition for women. Social and cultural changes in the early 20th century led to the emancipation of women. Educational reform and the opportunity to participate in sports were introduced. In the second Olympic Games in Paris and the following games, women already participated, but only in 'aristocratic' sports: tennis, croquet, sailing. In 1921, Alice Milliat founded the International Federation of Women's Sports. The following year, sportswomen revolted and organised the Women's Olympic Games. The first Games featured 77 athletes from Great Britain, Switzerland, Italy, Norway and France. The rebellion of sportswomen was effective. In 1928, athletics was introduced to the Olympic Games programme. This was gratifying for sportswomen.

Conclusions: Women have won the opportunity to participate in the Olympic Games and other sporting competitions. However, for a long time the number of sports available to women was limited. The commitment and perseverance of sportswomen led to the formation of women's sports associations. Women's organisational and sporting achievements were recognised.

Keywords: Sportswomen, Olympic Games, Women's World Games, Women's Sport

Formation of motivational interest in physical education and sports among students

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Introduction: The development of physical culture is determined by the objective necessity of society to ensure optimal physical activity for individuals. Research in the field of physical culture indicates that physical activity among the younger generation has significantly decreased, therefore, the problem of forming an interest in physical culture and sports is relevant.

Material and methods: The study was conducted at the Educational Establishment "Lutsk Lyceum No. 28 of Lutsk City Council," and participation in the research was voluntary and did not involve any form of remuneration. The research methodology involved theoretical analysis and synthesis of literary sources and scientific data through the study of scientific and methodological literature; pedagogical research methods; methods of socio-psychological research; pedagogical testing and surveying.

Results: Analysis of the structural elements of motivational interest in physical culture revealed the following: among all the attractive aspects of physical education and sports activities, students prioritize having a beautiful physique the most (70.9%); secondly, they prioritize health (68%); followed by physical qualities such as agility (51.2%), endurance (47.7%), speed (46.4%), strength (41.5%), and flexibility (39.8%); regarding volitional qualities, students in grades 6-11 prefer courage (65.5%) and perseverance (62.1%); followed by masculinity (46.7%), self-control (41.8%), and determination (35.3%); gender differences in the assessment of physical development aspects were identified: girls are more attracted to good posture (74.5%) and flexibility (53.1%). They enjoy exercises focusing on coordination of movements (53.4%) and agility (30.9%) the most; the least preferred are strength exercises (9.2%). Boys prefer strength exercises (60.8%) and endurance exercises (55.9%) the most, followed by speed exercises (52.6%) and coordination of movements (24.1%). Motivational interest in physical education and sports is higher among boys than girls. Boys' favorite sports are basketball (19.2%) and volleyball (16.7%), while volleyball is the most popular among girls (26.9%).

Conclusions: Motivational interest in sports shapes students' sports orientation and enhances their activity during school activities. In classes where such interest was fostered, there are more individuals with a pronounced interest in sports, and students exhibit a higher level of physical fitness. Their attitude toward their favorite sport is characterized by greater consistency compared to students not involved in sports-oriented activities.

Keywords: Motivation, Interests, Physical Education, Students

The essence and evolution of the concept of "quality of life" in economics

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The essence and evolution of the concept of "quality of life" in economics. Components of the population's quality of life: physical, economic security, material living conditions, employment, income, health, education, leisure, social contacts, ecology, management, protection of rights, and others. The Easterlin Paradox and the Quality of Life Analysis from Gallup. Measuring the quality of life of the population according to the methodology of the Economist Intelligence Unit, the European Statistical System Committee, the European Foundation for the Improvement of Living and Working Conditions, the Organization for Economic Cooperation and Development (Better Life Index), etc. Peculiarities of approaches to measuring the quality of life in different countries. PESTLE-analysis of factors affecting the level and quality of life. Income differentiation as a factor of the quality of life. The role of digital technologies in improving the quality of life. Comparative analysis of the quality of life in Ukraine, Slovak Republic, Czech Republic, and Poland in the pre-war period using international indexes such as the Human Development Index, Happiness Index, Global Competitiveness Index, Better Life Index, Index of Economic Freedom, Social Progress Index, etc. The population's quality of life in conditions of war. The impact of the war with Russia on the welfare indicators of the population in Ukraine. Ways to increase the level and quality of life: ensuring security, reducing poverty, developing the economy, expanding access to the labor market, educational and medical services. The relationship between the quality of governance and the quality of life. The role of civil society, social capital, and collective leadership in improving the quality of life. New opportunities and risks of ensuring a high quality of life in today's turbulent world.

Keywords: Measuring The Quality of Life, Factors of The Quality of Life, Economic Welfare, War In Ukraine

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