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PE TEACHERS' PERSPECTIVES ON HEALTH-RELATED PHYSICAL FITNESS REPORT CARDS

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Abstract: The importance of the concept of sustainability, which has reached a critical point for the future of societies, is increasing worldwide day by day. Promoting physical activity not only directly affects individuals' health but also makes significant contributions to achieving the Sustainable Development Goals by generating positive impacts in many areas such as economic development, combating climate change, education, and gender equality. In this context, the Health-Related Physical Fitness Report Card program has been implemented in schools in Türkiye to increase young people's levels of physical activity and raise awareness in this area. The increasing prevalence of physical inactivity and obesity in Türkiye has emerged as a major public health concern, particularly due to the decisive role of lifestyle habits acquired during childhood and adolescence in shaping individuals' health. In this context, although various challenges have been encountered during the implementation process of the 'Health-Related Physical Fitness Report Card (HRFRC)' program, which was initiated in Türkiye in 2016, the program has also been found to offer numerous benefits. Accordingly, this study aims to examine physical education teachers' views on the implementation based on their experiences and to determine whether these views differ according to demographic variables such as gender, professional seniority, licensed athletic background, and the location of the school. This study was conducted using a quantitative research method with a descriptive survey design. The study group consisted of 237 physical education teachers working in public middle schools in Ankara during the 2023–2024 academic year, selected through convenience sampling, one of the purposive sampling methods. Data were collected through an online questionnaire using the Health-Related Physical Fitness Report Card Implementation Evaluation Scale developed by Özgül et al. (2018). The results indicated that there were no significant differences in teachers' scale scores according to gender and licensed athletic background; however, significant differences were found in certain sub-dimensions of the scale with respect to professional experience and the school's settlement area. Teachers' views on the implementation provide an opportunity to structure the program in a manner that is more effective, sustainable, and aligned with development goals, thereby shedding light on future physical activity promotion initiatives and contributing to young people leading healthier and more active lives.

Keywords: Physical education and sport, physical activity, physical fitness report card

STUDENT DEVELOPMENT AS AN INDICATOR OF QUALITY PHYSICAL EDUCATION: EVIDENCE FROM A SPORT COACHING PROGRAM

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Abstract: Quality Physical Education is increasingly discussed in terms of learning outcomes, student development, and evidence-based improvement, yet much of the existing literature focuses on intended curricula rather than demonstrated educational impact. In higher education, empirical studies using institutional performance data to examine how students actually develop within Physical Education-related programs remain limited. This study aims to explore student development within a Sport Coaching bachelor's program as a contribution to the Quality Physical Education discourse. A quantitative research design was employed using retrospective academic records of approximately 120 undergraduate students enrolled in the bachelor's program in Sport Coaching at a higher education institution. The dataset includes course-based academic results, assessments from practice-oriented courses, cumulative grade point averages, and internship performance evaluations. Descriptive and correlational analyses are used to examine patterns of student progression across years of study and to explore relationships between academic achievement and practice-based performance within the program. The analysis focuses on how different components of the Sport Coaching curriculum relate to student development over time, with particular attention to the balance between theoretical coursework and practical learning experiences. Rather than assuming the effectiveness of the program based on stated learning outcomes, the study examines institutional data to provide an empirical perspective on how learning and development are reflected in students' academic and practical performance. By drawing on existing academic records, the research offers insight into the extent to which student development can serve as an indicator of quality in Physical Education-related higher education programs. The study contributes to ongoing discussions on Quality Physical Education by shifting the focus from curriculum intentions to observable educational processes and outcomes.



The findings are intended to inform curriculum review, assessment practices, and quality enhancement processes in Sport Coaching and related Physical Education programs, and to support data-informed approaches to evaluating educational quality in higher education contexts.

Keywords: Quality Physical Education, student development, sport coaching education, higher education, evidence-based practice

A HOLISTIC ANALYSIS OF LOWER EXTREMITY AND TRUNK STRENGTH ASYMMETRIES IN ELITE PARALYMPIC SWIMMERS: IMPLICATIONS FOR PERFORMANCE AND INJURY RISK

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Abstract: Objective: The aim of this study was to jointly examine knee isokinetic strength asymmetries and trunk isokinetic strength profiles in elite Paralympic swimmers and to evaluate the potential relationships between these variables from a kinetic chain perspective. Methods: This cross-sectional study included six elite Paralympic swimmers with limb deficiency impairments (3 females, 3 males). Concentric knee flexion and extension strength were assessed at angular velocities of 60°/s and 180°/s, while trunk flexion and extension strength were evaluated at 60°/s and 150°/s using an isokinetic dynamometer. Knee strength asymmetry (%) and trunk flexion/extension ratio were calculated based on peak torque (Nm) values. Data distribution was assessed using the Shapiro–Wilk test. Due to the small sample size, non-parametric statistical methods were applied, including the Wilcoxon signed-rank test and Spearman’s rank correlation analysis. Effect sizes were calculated using the formula $r = Z/\sqrt{N}$. Results: In bilateral knee analyses, no statistically significant differences were observed between the right and left limbs for flexion and extension peak torque values at either angular velocity ($p > 0.05$). However, clinically relevant strength asymmetries were identified at the individual level. Trunk analyses revealed reduced flexion and extension peak torque values at the higher angular velocity (150°/s) compared with 60°/s. Although these differences did not reach statistical significance, they were supported by large effect sizes ($r \approx 0.83$). No statistically significant association was found between knee extension strength asymmetry and the trunk flexion/extension ratio; nevertheless, a moderate negative correlation trend was observed. Conclusion: While pronounced knee strength asymmetries may not be evident at the group level in elite Paralympic swimmers, individual assessments provide critical insights for performance optimization and injury risk management. The reduction in trunk strength at higher angular velocities highlights the importance of trunk stability as a key component of swimming performance. The combined evaluation of lower extremity and trunk strength profiles represents a practical and holistic approach for performance monitoring and early risk identification in Paralympic swimmers.

Keywords: Paralympic swimming, isokinetic strength, trunk stability, strength asymmetry, performance profiling

STEPAM CONCEPT: INTEGRATING PHYSICAL EDUCATION AND STEM THROUGH EMBODIED LEARNING IN ELEMENTARY SCHOOL CHILDREN (AGES 7–10)

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Abstract: Primary education systems are currently confronted with two interconnected challenges: declining levels of daily physical activity among children and persistent difficulties in fostering early engagement and achievement in STEM disciplines. While educational policies increasingly advocate for more movement during the school day alongside stronger STEM competencies, these priorities are typically addressed through separate curricular initiatives. As a result, physical education and STEM subjects often compete for limited instructional time rather than reinforcing one another. There is a growing need for pedagogical models that meaningfully integrate both objectives within coherent classroom practice. This paper presents an interdisciplinary framework that combines physical education and STEM through embodied, game-based learning for children aged 7–10. The model consists of 36 structured interdisciplinary units (STEPAM - Teacher Training in Physical Activities and Embodied Learning through STEAM Education) designed to connect motor skill development with foundational concepts in science, mathematics, engineering thinking, and technological literacy. Drawing on principles of embodied learning and experiential pedagogy, the approach positions movement as a medium for conceptual understanding rather than as a parallel or supplementary activity. Elementary physical education games are systematically aligned with clearly defined STEM learning objectives, enabling students to explore abstract ideas



through structured physical tasks while ensuring feasibility within regular school environments. The study examines the implementation of these units in primary school settings, focusing on classroom dynamics, student engagement, and perceived educational value. Observational data and feedback collected during implementation indicate sustained participation, increased task engagement, and improved interaction during interdisciplinary sessions. Linking cognitive challenges with physical movement appeared to support comprehension of abstract STEM concepts by grounding them in concrete bodily experience. Teachers' perspectives were documented as part of the evaluation process, although detailed analysis of attitudes is addressed separately. The findings contribute to ongoing discussions on integrated curriculum design, suggesting that purposeful alignment of physical education and STEM can enhance both domains simultaneously. Embedding STEM learning within structured movement activities offers a feasible framework for increasing physical activity levels and strengthening early STEM exposure without imposing additional curricular burden. Acknowledgment: The study was developed within a project co-funded by the European Union through the Erasmus+ programme No. 2023-1-RS01-KA220-HED-000166894

Keywords: Physical education, STEM, Multidisciplinary education

FIDELITY REPORTING AND THE EFFECTIVENESS OF SCHOOL-BASED MOTOR SKILL INTERVENTIONS: EVIDENCE FROM A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Abstract: Introduction: Motor competence including fundamental motor skills such as locomotor, object-control, and balance skills, is a key foundation for children's physical activity participation, health, and cognitive development. Schools offer an ideal environment for structured motor skill interventions; however, previous reviews have reported substantial heterogeneity in outcomes and limited attention to implementation processes. In particular, implementation fidelity—the extent to which an intervention is delivered as intended—has rarely been systematically examined in school-based motor competence randomized controlled trials (RCTs), despite its central importance for internal validity and interpretation of results. This meta-analysis aimed to (a) examine the extent of fidelity reporting in school-based motor competence RCTs, (b) estimate their overall effectiveness, and (c) test whether fidelity reporting moderates' intervention effects. Methods: A systematic search of PubMed, Web of Science, Scopus, and Embase (2010–2025) was conducted following PRISMA 2020 guidelines (PROSPERO: CRD420251151650). Eligible studies were school-based RCTs involving healthy children aged 5–18 years and assessing motor competence outcomes. Standardized mean differences (SMD) were calculated using pre–post control group designs. Random-effects models were applied. Subgroup analyses and meta-regression examined fidelity reporting (yes/no), intervention duration, and risk of bias as moderators. Publication bias was assessed using funnel plots, Egger's test, and trim-and-fill procedures. Results: Twenty-two RCTs met inclusion criteria. The pooled effect indicated a significant improvement in motor competence (SMD = 0.641, 95% CI [0.383, 0.899], $p < 0.001$), although heterogeneity was substantial ($I^2 = 90.3\%$). After trim-and-fill adjustment, the pooled estimate decreased (SMD = 0.515) but remained statistically significant. Eleven studies (50%) explicitly reported fidelity, while only one referenced a formal framework. Meta-regression confirmed fidelity as a significant moderator ($\beta = -0.625$, $p = 0.003$), explaining 26.3% of between-study heterogeneity. In contrast, risk of bias was not associated with fidelity ($p = 0.565$) and did not emerge as a significant moderator in meta-regression when modelled alongside fidelity, whereas fidelity remained significant. Intervention duration was not a significant moderator. Conclusions: School-based motor competence interventions are effective; however, implementation fidelity significantly shapes observed outcomes. Studies reporting fidelity yield smaller but more methodologically robust effects and account for a meaningful portion of heterogeneity. Strengthening fidelity monitoring and integrating structured implementation frameworks are essential to improve reliability and real-world impact of school-based motor competence programs.

Keywords: motor competence; motor skills; implementation fidelity; school-based interventions; randomized controlled trials.



UNVEILING THE ROOTS OF TEACHER MOTIVATION: VALIDATION OF THE TEACHING MOTIVATION IN PHYSICAL EDUCATION QUESTIONNAIRE IN GREECE

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Abstract: Introduction: The study draws on the Expectancy-Value-Cost theory of motivation proposing that individuals' motivation is shaped by their beliefs about success (expectancy), the importance or usefulness of the task (value), and the anticipated effort, time, and emotional constraints (cost). These beliefs shape teachers' engagement, persistence, and instructional effectiveness, especially in subjects like PE that are often undervalued within school systems. The purpose of this study was to examine the psychometric properties of the Teaching Motivation in Physical Education Questionnaire (TMPEQ; Garn et. al., 2024) in a sample of Physical Education (PE) teachers in Greece. The validation process included translation, face validity, construct validity, internal consistency and measurement invariance. Methods: A cross-sectional design was used, involving 224 Greek PE teachers (57.6% female; M age = 54.81 ± 6.84 years; M PE teaching experience = 22.85 ± 9.41 years), working in elementary (63.4%) and secondary (36.6%) schools, primarily in urban (89.3%) and suburban areas (8%). Participants completed the Greek-translated TMPEQ, adapted by two bilingual experts to ensure semantic accuracy and cultural relevance. The instrument consists of 18 items measuring three subscales: expectancy, value, and cost beliefs, rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Confirmatory Factor Analysis (CFA) with standardized fit indexes (e.g., χ^2/df , CFI, TLI, RMR, RMSEA), as well as measurement invariance testing, were used to assess construct validity, while Cronbach's alpha coefficients were calculated to evaluate internal consistency. All analyses were conducted using IBM AMOS and SPSS. Results: The CFA confirmed a good model fit for the three-factor structure [$\chi^2/df = 1.55$, CFI = 0.953, TLI = 0.946, RMR = 0.051, RMSEA = 0.050 (90% CI = 0.036–0.063)]. Standardized factor loadings ranged from 0.67 to 0.80 for expectancy, 0.50 to 0.65 for value, and 0.67 to 0.79 for cost, supporting the factorial structure. Measurement invariance testing revealed equivalence between the various subgroups. Internal consistency was excellent, with Cronbach's alphas of 0.878 (expectancy), 0.767 (value), and 0.864 (cost), demonstrating that the subscales are reliable for use in Greek educational contexts. Discussion: Overall, validating the TMPEQ in a new linguistic and cultural context contributes to a broader understanding of how motivational beliefs function across educational settings and supports future research on teacher wellbeing and instructional quality. The study enhances opportunities for international comparative research by providing a validated tool for examining motivational constructs among Greek PE teachers, filling a gap in cross-cultural educational measurement. The validated instrument can be used by teacher educators, researchers, and policymakers to more adequately understand and, potentially, enhance teacher motivation.

Keywords: educator engagement, instructional persistence, motivation dynamics, teacher effectiveness, Expectancy-Value Theory, teacher beliefs

GENDER STEREOTYPES AND POST-TRAUMATIC BELIEF SYSTEMS IN FEMALE ATHLETES: A CBT-BASED ANALYSIS

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Abstract: Introduction: Gender-based violence (GBV) and culturally transmitted gender stereotypes continue to shape belief systems within athletic environments, particularly among female athletes. In many post-Soviet contexts, socially embedded myths regarding femininity, weakness, and emotional restraint influence how women interpret both success and adversity. These narratives may evolve into post-traumatic cognitive schemas following experiences of violence or discrimination. The present study explores how such internalized gender myths function within a Cognitive Behavioral Therapy (CBT) framework and examines their relationship with trauma exposure and psychological resilience among female athletes. Methods: A quantitative cross-sectional survey was conducted in January 2025 with 177 female athletes (aged 18–25, representing both individual and team sports) studying in sports academies. Participants completed a 20-item Likert-scale questionnaire assessing beliefs related to physical, psychological, economic, and sexual violence. Psychological resilience was measured using the



Connor-Davidson Resilience Scale (CD-RISC). Demographic data and self-reported trauma exposure were also collected. Statistical analyses were performed using SPSS, including descriptive statistics, Pearson correlation coefficients, and regression analysis to determine predictive relationships. Results: Results revealed a statistically significant negative correlation between endorsement of gender-based myths and psychological resilience ($r = -0.41, p < .01$). Higher levels of internalized stereotypes were associated with lower self-esteem and increased emotional suppression. Trauma exposure showed a positive correlation with myth endorsement ($r = .36, p < .05$), indicating that individuals exposed to violence may rationalize their experiences through culturally transmitted narratives. Regression analysis suggested that myth endorsement significantly predicted reduced resilience levels. Discussion/Conclusions: The findings demonstrate that gender stereotypes operate as maladaptive post-traumatic belief systems that undermine psychological resilience in female athletes. Within a CBT framework, these schemas can be addressed through targeted cognitive restructuring to challenge dysfunctional myths and trauma-informed reflection to strengthen self-efficacy. Furthermore, the study highlights the necessity of implementing gender-sensitive mental health protocols and training programs for coaches to foster a more resilient and supportive athletic environment.

Keywords: Gender Stereotypes, Psychological Resilience, Female Athletes, Cognitive Behavioral Therapy (CBT), Post-Traumatic Schemas.

TEACHER PARTICIPATION AS A FACTOR INFLUENCING PHYSICAL ACTIVITY LEVELS IN PRIMARY SCHOOL PHYSICAL EDUCATION CLASSES

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Abstract: Physical activity levels during physical education (PE) classes are a key indicator of instructional effectiveness and student engagement. The role of the teacher as an active participant in the lesson may represent an important pedagogical variable influencing students' physical activity. The aim of this study was to examine differences in physical activity levels between a control group and an experimental group during PE classes, with a specific focus on teacher participation. The research was conducted at 64 Primary School "Tsar Simeon Veliki" in Sofia, Bulgaria. The sample consisted of 45 fourth-grade students (24 boys and 21 girls), divided into two groups: one control class and one experimental class. In the control group, the PE lesson was conducted according to conventional instructional practices. In the experimental group, the teacher actively participated alongside the students throughout the lesson. Physical activity levels were measured using Axivity AX3 accelerometer wristbands. The results revealed statistically significant differences in physical activity levels among girls, favoring the experimental group ($p < .05$). No statistically significant differences were found among boys between the two groups. It can be concluded that teacher participation during PE lessons increases students' physical activity levels, particularly among girls. These findings suggest that the teacher's embodied involvement may serve as a motivational and regulatory mechanism, enhancing engagement and movement intensity in primary school PE settings.

Keywords: physical education, teacher participation, physical activity, accelerometry, primary school students

STATUS OF SOME INDICATORS OF PHYSICAL DEVELOPMENT OF 5TH GRADE STUDENTS

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Abstract: Physical development is one of the most important criteria for an individual's health status. It is frequently used as an objective indicator of the effectiveness of physical education instruction. The aim of the present study was to determine the level of physical development among fifth-grade students. Within a two-week period at the beginning of the 2024/2025 academic year, testing was conducted using anthropometric and motor assessments. The study was carried out at Secondary School No. 22 "G. S. Rakovski", Sofia. A total of 100 fifth-grade students participated in the research, including 48 girls and 52 boys. Although the results indicate that fifth-grade girls achieved slightly better physical development indicators compared to boys, these differences were not supported by the required level of statistical significance. Overall, the examined girls and boys demonstrated relatively similar levels of physical development.

Keywords: physical development, students, physical education, motor qualities



PHYSICAL EDUCATION IN ARMENIA'S PUBLIC SCHOOLS: CURRICULUM EVALUATION AND RECOMMENDATIONS FOR A COMPREHENSIVE IMPLEMENTATION FRAMEWORK

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Abstract: Introduction. In Armenia, school physical education, officially referred to as Physical Culture, has long been influenced by Soviet educational traditions, while more recent reforms have sought to reposition it within a broader, humanistic educational framework. According to official curriculum documents, Physical Culture is intended to serve as a comprehensive educational subject aimed at promoting and developing students' physical health, physical skills, cognitive capacity, values, social competencies, and long-term engagement in physical activity. In practice, however, concerns remain regarding the extent to which these educational aims are implemented in school settings. Methods. This paper explores the relationship between the officially declared goals of Physical Culture and its practical implementation in Armenian secondary schools. For the purposes of this study, secondary education specifically refers to compulsory pre-college schooling, covering Grades 1–9 (ages 7–15). Conceptual analysis, drawn from analytical philosophy, is used to clarify and critically assess the educational aims of the subject, including its physical, cognitive, ethical, and social dimensions. For the evaluation of the practical implementation, qualitative methods such as curriculum document analysis, classroom observation, and interviews with teachers and students are employed to evaluate how these goals are actually implemented in everyday school settings. By combining philosophical conceptualization with empirical investigation, this study seeks to identify both the intended and actual outcomes of Physical Culture education. Results. The analysis suggests a clear imbalance between curriculum intentions and pedagogical implementation. Although official documents emphasize comprehensive student development, their conceptualization remains somewhat unclear. In practice, teaching is predominantly focused on physical performance, technical skill execution, and fitness testing. In less favorable cases, Physical Culture is treated as a marginal or residual activity, taking the form of unstructured play or a minor, peripheral module. Educational dimensions such as reflection, ethical learning, social cooperation, and health-related understanding tend to remain secondary, if addressed at all, and are rarely incorporated systematically. Consequently, Physical Culture often functions primarily as a form of physical training rather than as a fully integrated educational discipline aimed at comprehensive student development. Discussion. This predominance of performance-oriented approaches, or the treatment of the module as a secondary academic discipline at best, limits the broader educational role that Physical Culture could play within the general educational system. The paper argues for a more balanced approach in which physical development is integrated concurrently with cognitive, social, and ethical development. Such a shift may help strengthen the educational identity of Physical Culture in Armenian schools and support its development as a genuinely holistic component of the school curriculum.

Keywords: Physical Education; holistic development; curriculum and practice; Armenia

EVALUATION OF THE IMPACT OF A SPORT+ PROJECT ON AT-RISK YOUTH

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Abstract: Introduction: The instrumentalisation of sports for accomplishing a range of social, educational and developmental goals targeted at youth is a well-established policy and practice everywhere. Most studies however focus predominately on quantifiable data to demonstrate any success and largely fail to explain how and why reported outcomes come about. The current research uses a realistic evaluation perspective to unveil what works, how, to what effect and in which specific circumstances in the case of at-risk youth participants in a Sport+ project. Methods: Given the temporal aspect of social impacts in terms of their form, meaning and subjective perception by the individual participant, semi-structured interviews with a focus group of total 50 participants were conducted at four different time points. The sample consisted of youth who had committed a criminal act and facing some deficit model in their behavior. A key requirement was the school-students had participated in at least one of the proposed activities, as well as the condition of reproducing the interviews with the same individuals throughout the duration of the project. Results: The results show that the leading motivation for taking part in proposed sport and art activities is influencing certain determinants of their behaviour and social relationships, and creating a supportive environment for a successful life adaptation after leaving school. In addition, the demonstration of commitment, systematic work and attitude on the part of the coaches and teachers, along with conducting activities on site, emerge as key motivational mechanisms. Thus, an emerging relationship is based on: trust; positive attitude; gained authority; quality of communication; reciprocity; the extent to which the activities are motivating and engaging. Discussion: The identified effects and benefits resulting from the social interactions between the



participants themselves, as well as between them and staff, represent a combination of mutually complementary social, behavioral, psychological and resource characteristics. One of the key practical implications is that the act of participation in sport and/or other activities itself is not sufficient for creating any significant social impacts, rather they are produced by the interpretations and judgements by the individual beholder as to what is valuable for him/her at a given point in time. In this way, the focus shifts from the generally accepted abstract claims that sport is by default able to change the life of at-risk youth to the strictly subjective perceptions, experiences and assessments by the participants.

Keywords: social impact, evaluation, at-risk youth, mechanisms, participants

THE INFLUENCE OF SOME ANTHROPOMETRIC CHARACTERISTICS ON THE PERFORMANCE OF MOTOR TESTS OF HIGH SCHOOL STUDENTS IN GRADE 10

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Abstract: The purpose of this research is to analyse anthropometric parameters in relation to motor test performance and to determine whether anthropometric characteristics influence motor test outcomes. The population from which the research sample was drawn comprises 10th-grade students at the high school "The British School of Kosova"; the sample comprised 60 students: 40 men and 20 women. To assess the influence of goalkeepers in this study, we used anthropometric parameters and motor tests. To analyse the study results, IBM SPSS Statistics 24 was used. The data were presented using descriptive statistics and Pearson's linear correlation coefficient. According to descriptive statistics, all anthropometric and motoric parameters followed normal distributions, except for Ilion's Agility Test and Throwing the medicine ball from a chair, which showed positive skewness and kurtosis. Pearson's bivariate correlation analyses indicated that all anthropometric parameters were significantly correlated with motoric parameters. It can be concluded that all anthropometric parameters selected for this study were strongly correlated with motoric parameters; in particular, length, leg length, and hand length were strongly correlated with vertical jump ($p < 0.01$).

Keywords: anthropometric, motorics, students, parameters.

INVESTIGATION OF TAEKWONDO COACHES' TEACHING STYLES: INCORPORATING THE CIRCUMPLEX MODEL

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Abstract: In modern times, there is an interest in children's and youth engagement with martial arts at a non-competitive level, with positive effects recorded in their holistic development. Studies show that martial art training is usually based on teacher-centered coaching methods and styles, causing athlete drop out. University programs are seeking for frameworks to support practitioner development, especially in terms of supporting children's and youth engagement with martial arts at a non-competitive level. The purpose of this study was the investigation of the teaching styles adopted by World Taekwondo (WT) coaches at a non-competitive level with the use of the Circumplex Model of Self-Determination Theory (Aelterman et al., 2019). A total of 14 taekwondo coaches participated in the study (6 female, 8 male), aged 25-53 years ($M = 38.93$, $SD = 10.09$) and with 2-35 years of teaching-coaching experience in taekwondo ($M = 15$, $SD = 9.60$). Data generation included individual semi-structured interviews, which were thematically analyzed using NVivo software. Results showed that the main teaching practices adopted by participants involved a) lesson organization routines, b) instruction delivery, c) activity modification and d) behavior and management activities, while they perceived their role through the a) identity of teacher-educator, b) coaching-learning responsibilities, c) emotional closeness with children, d) managing relationships with parents and e) training and personal improvement. Furthermore, their views on the



values and principles of taekwondo focused on a) individual values-principles, b) social values-principles, c) integration of values-principles through interaction and role modeling and d) integration of values-principles through rules and routines. Analyzing the above findings through the Circumplex Model, it emerges that coaches had a tendency to adopt both need-supportive and need-thwarting teaching styles and especially teaching styles that provide structure and less teaching styles that provide control and autonomy, a conclusion that also highlights the complexity of the teaching reality. Suggestions are made concerning the updating of higher education curricula towards the coaches' training on pedagogical content knowledge and teaching styles that are appropriate to meet young athletes' developmental needs and positive experiences.

Keywords: youth sports, pedagogical content knowledge, teaching practices, role of coaches, circumplex model of self-determination theory

PARENTS' OPINIONS OF PHYSICAL AND HEALTH EDUCATION FOR CHILDREN WITH DISABILITIES IN SERBIA

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Abstract: Introduction: The inclusion of students in the process of physical and health education represents a new experience for every student; however, when it comes to students with disabilities, access to this area may be more challenging. Particularly in the field of physical and health education, family support plays a significant role in overcoming barriers and encouraging the participation of children with disabilities in physical activities (Opoku et al., 2020). Methods: The study was conducted in September 2025 on a sample of 48 parents of children with disabilities from the "Anton Skala" Special Education School and the Home for Children and Youth with Hearing Impairment in Belgrade. Data were collected through an anonymous questionnaire consisting of demographic characteristics, child-related variables, and 13 Likert-scale items examining parents' opinions on physical education classes, community support, and the adequacy of facilities and equipment. Descriptive statistics (minimum, maximum, mean, and standard deviation) were calculated. Differences between parents with higher and lower educational levels were examined using the Mann-Whitney U test. Results: Descriptive statistics indicate highly positive opinions regarding physical education classes ($M = 4.27-4.94$), with the highest scores assigned to the statement that physical education is beneficial for the child's health ($M = 4.94$). In contrast, community support was rated considerably lower ($M = 2.23-2.60$). A statistically significant difference was found only for the item concerning the positive impact of physical education on health and social skills ($p = 0.03$), with parents of higher educational levels expressing more favorable opinions. No significant differences were observed for other variables. Conclusion: Parents generally support inclusive physical education and believe in its benefits for their children's health and social development. However, there is clear dissatisfaction with the level of community support and the availability of adapted programs outside of school. The findings suggest a need for better parental information and increased investment in infrastructure beyond the formal education system.

Keywords: person with disability, physical and health education, parents, inclusion

EXPERT ASSESSMENT OF THE MANAGEMENT OF TAEKWONDO (WT) IN BULGARIA

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Abstract: Introduction: The efficient management of modern sports organizations increasingly requires evidence-based decision-making supported by expert knowledge and institutional analysis. As an Olympic combat sport with growing participation and organizational complexity, Taekwondo (World Taekwondo format) in Bulgaria operates within a dynamic socio-economic and institutional environment that demands adaptive governance models. Despite its expanding popularity and established organizational structure, challenges related to strategic coordination, human resource development, and institutional communication remain evident. The purpose of this study is to examine expert evaluations of Taekwondo (WT) management in Bulgaria and identify



key managerial factors influencing the effectiveness and future development of the system. **Methods:** The study employs a mixed-methods approach based on sport management and institutional theory. Data were collected through an expert survey conducted among 34 specialists actively involved in the governance and development of Taekwondo (WT) in Bulgaria, including federation officials, sport club managers, and coaches. A structured expert assessment instrument comprising 26 indicators was developed to evaluate the managerial, organizational, and marketing aspects of the system. The research employed sociological survey methods, document analysis, and descriptive statistical procedures for data processing and interpretation. The study was conducted within the framework of a broader research project examining institutionalization processes in sport organizations. **Results:** The findings, in general, indicate positive expert perceptions regarding institutional cooperation, accessibility of sport services, and the existence of established organizational practices within Taekwondo (WT) in Bulgaria. Strengths identified include effective collaboration with national and international sport institutions, increased participation, and stable organizational structures. However, experts highlighted several critical management challenges, including insufficient development of sport management competencies, uneven resource allocation, communication inefficiencies between institutional levels, and partial misalignment with international development trends. The results demonstrate that human resource capacity and strategic planning are perceived as the most influential determinants of organizational effectiveness. **Discussion:** The expert evaluation confirms the need for a more structured, strategically oriented management approach grounded in institutional principles. Strengthening managerial competencies, improving coordination mechanisms, and integrating long-term strategic planning are essential for sustainable development. The study contributes to sport management research by providing empirical evidence on governance challenges within a national sport federation and by offering practical implications for improving organizational performance in emerging and non-traditional sports contexts.

Keywords: sport management, expert evaluation, taekwondo, sport governance

BODY HEIGHT, BODY WEIGHT, BMI, AND NUTRITIONAL STATUS AMONG MALE ADOLESCENTS IN MONTENEGRO: A NATIONWIDE ARCHIVAL STUDY (1979–1987)

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Abstract: Introduction: Monitoring anthropometric characteristics such as body height, body weight, and body mass index (BMI) is essential for understanding biological development and population health. Montenegro, located in the Dinaric Alps region known for exceptionally tall populations, lacks comprehensive national historical data on adolescent growth during the late 20th century. The aim of this study was to examine secular trends in body height, body weight, BMI, and nutritional status among male adolescents in Montenegro using nationwide archival data collected between 1979 and 1987. **Methods:** This retrospective cross-sectional study included 83,274 male adolescents born between 1961 and 1969 who underwent mandatory military medical examinations across Montenegro. Data were obtained from digitized archival medical records collected under standardized procedures. Body height and body weight were measured by trained medical personnel, and BMI was calculated (kg/m^2). Nutritional status was classified according to World Health Organization criteria. Differences across birth cohorts were analyzed using ANOVA and linear regression, while trends in nutritional status were assessed using chi-square tests. **Results:** The mean body height of the total sample was 176.76 ± 6.91 cm, confirming the exceptional stature of Montenegrin adolescents during the study period. Mean body weight was 67.80 ± 8.93 kg and mean BMI 21.67 ± 2.39 kg/m^2 . Although statistically significant cohort differences were observed ($p < 0.001$), effect sizes and regression analyses indicated no meaningful secular changes in body height, body weight, or BMI. Overall, 85.9% of participants had normal BMI, while 7.2% were overweight and 0.6% obese. A modest but significant increase in overweight and obesity prevalence across younger cohorts was identified ($p < 0.001$). **Discussion:** The findings indicate relative stability in anthropometric characteristics among Montenegrin male adolescents during the 1980s, alongside generally favorable nutritional status. However, early signs of increasing overweight prevalence were observed. This nationwide archival analysis provides an important historical baseline for evaluating long-term trends and contemporary public health changes in Montenegro and the wider Dinaric region.

Keywords: anthropometry, BMI, adolescents, secular trends, Montenegro



BRIDGING THE POLICY-PRACTICE GAP IN PHYSICAL EDUCATION: MACEDONIAN TEACHERS' PERCEPTIONS OF MOTOR DEVELOPMENT AND CURRICULUM IMPLEMENTATION

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Abstract: Introduction: Physical education (PE) plays a fundamental role in developing motor competence, physical literacy, and lifelong engagement in movement. Although European and national policy frameworks promote inclusive and high-quality PE, the translation of curricular intentions into everyday teaching practice often remains inconsistent. In North Macedonia, limited empirical evidence exists regarding teachers' perceptions of motor-development implementation within the national curriculum. This study examines PE teachers' perceptions of curriculum implementation, perceived barriers, institutional support, teacher self-efficacy, and policy-practice alignment, with particular attention to urban to rural differences. Methods: A national sample of 232 primary school PE teachers completed the Physical Education Teachers' Perceptions of Motor Development and Curriculum Implementation (PET-MDCI) questionnaire. The instrument assessed five domains: Curriculum Implementation, Barriers, Enablers/Support, Teacher Self-Efficacy, and Policy-Practice Alignment. Descriptive statistics summarized trends. Group differences were examined using independent-samples t-tests, ANOVA, and non-parametric tests where appropriate. Correlation analyses explored relationships among subscales. Results: Teachers reported moderately high curriculum implementation ($M = 3.57 \pm 0.66$) and strong self-efficacy ($M = 3.84 \pm 0.70$). Perceptions of policy-practice alignment were lower ($M = 2.92 \pm 0.84$), indicating a noticeable implementation gap. Significant urban to rural differences emerged: rural teachers reported higher barriers ($p = .014$) and significantly lower enablers ($d = 0.76$), self-efficacy ($r = .37$), and policy alignment ($d = 0.98$). Younger teachers demonstrated significantly higher curriculum implementation than the oldest age group ($p = .018$, $\eta^2 = .035$). Correlation analyses showed strong positive associations among institutional support, self-efficacy, and policy alignment ($r = .62-.77$), while barriers were negatively related to all positive domains ($r = -.26$ to $-.45$). Discussion: The findings indicate that Macedonian PE teachers are professionally motivated and confident, yet structural inequalities limit consistent curriculum realization, particularly in rural contexts. The strong interdependence between support, self-efficacy, and policy alignment suggests that effective implementation requires systemic coherence rather than isolated interventions. Urban to rural disparities highlight the need for targeted resource allocation, professional development, and institutional strengthening in under-resourced schools. Enhancing curricular clarity, improving infrastructural equity, and integrating monitoring systems could reduce the policy-practice gap. The PET-MDCI provides a structured framework for ongoing evaluation and evidence-informed reform of physical education in North Macedonia. Keywords: physical education, motor development, curriculum implementation, teacher perceptions, policy-practice gap, physical literacy

Keywords: physical education, motor development, curriculum implementation, teacher perceptions, policy-practice gap, physical literacy

Cross Cultural Examination of Psychological Resilience-Coping-Burnout Relationships Among Sports Science Students: A Multi-Group Analysis in Azerbaijan and Türkiye

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Abstract: Introduction: Sports science students experience intense academic expectations and pressure to perform well in sports simultaneously, meaning that their coping resources and psychological resilience can significantly influence their risk of burnout. The aim of this study is to examine the relationships between psychological resilience, coping strategies, and burnout among sports science students in a cross-cultural context and to produce



evidence regarding the comparability of measurements in samples from Azerbaijan (AZ) and Türkiye (TR). Methods: The study was conducted with a total of 245 (age: 20.49 ± 3.25 years) sports science students, including 110 (age: 22.08 ± 2.41 years) from TR and 135 (age: 19.05 ± 3.24 years) from AZ. Data were collected online via Google Forms; the Brief Resilience Scale (BRS-6), the 18-item form of the Brief COPE (COPE-18), and the 13-item form of the Athlete Burnout Questionnaire (ABQ-13) were used. Reverse items were corrected, and all scores were calculated as item means on a scale of 1-5; data cleaning, scoring, descriptive statistics, and reliability analyses were performed in Python. Results: The analyses were conducted based on the total scores of the three scales. In the Turkish sample, the mean total scores were 20.25 ± 3.95 for the BRS, 54.65 ± 5.75 for the COPE-18, and 32.58 ± 10.14 for the ABQ-13. In the Azerbaijani sample, the BRS total score was 20.93 ± 3.95 , the ABQ-13 total score was 30.71 ± 8.89 , and the COPE-18 total score was 50.85 ± 7.45 . The internal consistency values were $\alpha = 0.828$ for BRS, $\alpha = 0.736$ for COPE-18, and $\alpha = 0.893$ for ABQ-13 in TR; and $\alpha = 0.609$ for BRS, $\alpha = 0.778$ for COPE-18, and $\alpha = 0.814$ for ABQ-13 in AZ. In between-group comparisons (Welch's t-test), the COPE-18 total score was found to be significantly higher in TR than in AZ ($p < 0.001$; Hedges $g = 0.56$), whereas no significant differences were observed in the total scores for BRS ($p = 0.183$; $g = -0.17$) and ABQ-13 ($p = 0.131$; $g = 0.20$). Correlation analyses in the entire sample showed a moderate negative relationship between psychological resilience and burnout ($r = -0.423$; $p < 0.001$); The relationships between COPE-18 and BRS ($r = 0.012$; $p = 0.847$) and ABQ-13 ($r = 0.060$; $p = 0.351$) were not significant. Discussion: In the between-group comparison, only the COPE-18 total score was found to be significantly higher in the Turkish sample, while no significant differences were observed between the two countries in terms of BRS and ABQ-13 total scores.

Keywords: Psychological resilience, Coping strategies, Burnout, Sports science students, Cross-cultural comparison

IMPACT OF HIGHER EDUCATION LEVEL ON QUALITY OF LIFE AMONG ATHLETES IN AZERBAIJAN: A COMPARATIVE MIXED-METHODS STUDY

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Abstract: Introduction: The development of dual careers in athletes is increasingly recognized as a key factor in ensuring long-term sustainability in sport and a successful transition after retirement. Higher education may contribute to psychological stability, social integration, and broader life perspectives. However, in Azerbaijan, the relationship between education level and athletes' quality of life remains insufficiently studied. The aim of this study was to examine differences in quality of life between athletes with and without a higher education level and to compare quantitative findings with expert evaluations provided by coaches. Methods: The study included 216 athletes (137 men, 79 women) aged 18–35 years. Of these, 148 athletes had a higher education level (completed or currently enrolled in higher education), while 68 did not. Quality of life was assessed using the WHOQOL-BREF questionnaire, which measures four domains: Physical Health, Psychological, Social Relationships, and Environment. Statistical analysis was performed using IBM SPSS Statistics. Independent samples t-tests were applied to determine differences between groups. Statistical significance was set at $p < 0.05$. Additionally, a qualitative component was conducted through structured interviews with 13 active coaches representing national federations in Olympic and non-Olympic sports (coaching experience 5–40 years). Interviews were transcribed and analyzed using thematic categorization. Identified themes were aligned with the four WHOQOL-BREF domains to allow comparison with quantitative results. Results: Statistically significant differences were identified between athletes with and without a higher education level across all four domains of quality of life ($p < 0.05$). Athletes with a higher education level demonstrated consistently higher mean scores in Physical Health, Psychological well-being, Social Relationships, and Environment domains. The qualitative findings supported these results. Coaches emphasized greater psychological resilience, improved social adaptation, clearer career orientation, and better overall life balance among athletes with a higher education level. These themes corresponded closely to the WHOQOL-BREF domain structure. Discussion: The findings indicate that a higher education level is associated with improved quality of life among athletes. The convergence of quantitative and qualitative evidence strengthens this interpretation. Promoting dual career pathways may therefore represent an important strategy for enhancing athletes' well-being and long-term personal development.

Keywords: Dual career; Quality of life; WHOQOL-BREF; Higher education; Athletes



EFFECT OF GEOGRAPHICAL CONTEXT ON GENDER DIFFERENCES IN CARDIORESPIRATORY FITNESS IN A LARGE CHILDREN COHORT

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Abstract: Introduction: Cardiorespiratory fitness (CRF), typically expressed through $VO_2\max$, is a significant indicator of physical fitness and a vital marker for preventing childhood cardiometabolic risk. While insufficient CRF may signal future health vulnerabilities, its determinants are highly multifactorial. These include biological variables like body mass index (BMI), psychological factors such as perceived competence, and contextual determinants like geographical residence. This study aims to analyze the association between geographical context and CRF ($VO_2\max$) in a cohort of children from the Puglia region (Italy), concurrently evaluating individual and psychosocial determinants. Methods: The cross-sectional study evaluated a cohort of 8,806 children (48.1% girls, 51.9% boys) evenly distributed across six provinces in Puglia, Italy. Evaluated measures included BMI, estimated $VO_2\max$, Standing Long Jump (SLJ), 4x10m Shuttle Run (SR), Perceived Self-Efficacy (PSE), and Enjoyment. Statistical analyses encompassed independent t-tests to evaluate gender differences, Pearson's correlations for bivariate relationships, and a General Linear Model (GLM). The GLM was utilized to assess the main effects and the moderating interaction of geographical context (Province) and Gender on $VO_2\max$, controlling for physical and psychological covariates. Results: Preliminary analyses revealed significant gender differences across all variables. Boys exhibited higher BMI values, whereas girls demonstrated significantly higher mean $VO_2\max$. A strong negative correlation was found between $VO_2\max$ and BMI. The GLM significantly predicted $VO_2\max$, explaining 16.6% of the total variance. Anthropometric and physical covariates were the most important determinants. BMI emerged as the strongest negative predictor of $VO_2\max$, followed by the 4x10m SR. Conversely, SLJ and PSE were identified as significant positive predictors. However, Enjoyment was not a statistically significant predictor. Crucially, after controlling for all variables, main effects for sex and age, as well as the Province-by-Sex interaction, were not statistically significant. Discussion: The findings highlight that while gender differences in fitness exist, geographical context does not significantly moderate cardiorespiratory fitness when individual physical, anthropometric, and psychological variables are controlled. BMI remains the most substantial barrier to optimal CRF. Consequently, public health and educational strategies aimed at improving children's fitness should prioritize modifiable individual factors—such as body composition and self-perception—over broad geographical metrics. Schools remain a key setting for adopting integrated, targeted approaches to foster physical activity and support positive health trajectories.

Keywords: Cardiorespiratory fitness; Geographical context; BMI; School-age children.

PHYSICAL EDUCATION PRESEERVICE TEACHER TRAINING AND PERCEIVED AND MEASURED HEART RATE IN PHYSICAL ACTIVITY INVESTIGATION AS BRIDGE WITH THE HEALTHY AND ACTIVE LIFESTYLE PROGRAM IN PRIMARY SCHOOL

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Abstract: Physical activity promotion in schools depends not only on curricular structures but also on teachers' physical literacy and bodily awareness. The ability to recognise and interpret physiological signals, such as heart rate (HR), represents a foundational competence for effectively modelling and teaching healthy behaviours. This study aimed to examine the level of bodily awareness among preservice teachers by comparing analogue and digital HR measurements following two standardised physical tasks. A cross-sectional design was employed involving 202 preservice teachers enrolled in a physical education training program. Participants completed a 6-minute walk test and an agility test. Immediately after each task, HR was assessed using carotid artery palpation (analogue method) and a digital method using smartphone Apps. Paired-sample t-tests were conducted to compare HR values obtained through the two measurement approaches. Results revealed a consistent and statistically significant underestimation of HR when measured manually compared with digital monitoring in both the 6-minute walk test ($p = .001$) and the agility T-test ($p = .008$). These findings indicate limited interoceptive accuracy among preservice teachers and highlight discrepancies between perceived and actual physiological exertion. The



study underscores the importance of integrating bodily awareness training and physiological self-monitoring into preservice teacher education. Combining analogue techniques with real-time digital biofeedback may enhance interoceptive competence, strengthen physical literacy, and better prepare future educators to promote safe and effective physical activity in school settings in according with evidence based physical education.

Keywords: Physical education preservice education, Body awareness, Heart rate monitoring, Analogic- Digital, Physical activity promotion

CURRICULAR PHYSICAL EDUCATION: CONTRIBUTION OF MOVEMENT SCIENCES TO THE DEVELOPMENT OF PREREQUISITES FOR SCHOOL SKILLS AND READING AND WRITING IN PRIMARY SCHOOL FROM AN EVIDENCE-BASED PERSPECTIVE

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Abstract: This study investigates the prerequisites for reading and writing in the academic curriculum for preservice teachers (primary and primary in national Italy school system), given the decline in written text comprehension performance among students attending Italian schools, as measured by national and international tests, estimated at between 25% and 35% (MIM, INVALSI, OECD, 2024). Reading and writing is a fundamental academic skill and an initial literacy process acquired primarily during primary school, not spontaneously. It is a complex skill that requires the development of prerequisites (visual, motor, and phonological) and the passage through stages. Guided Process: Unlike oral language, writing is not innate and requires systematic teaching, usually guided by an adult. Key Components: Includes cognitive skills such as phonological awareness, phonetics, motor fluency derived from functional grape, and sign decoding (spatial orientation) to lead to text comprehension. Learning Stages: Develops through a hierarchical model, often starting from the logographic stage (visual-spatial recognition and production of logos - fine motor skills expressed through the functional grape of the pencil-pen tool) up to full literacy. Prerequisites: Acquisition is prepared by skills that develop around 4-5 years of age (visual analysis and spatial orientation - graphic production through functional means) to convert phonemes into graphemes and viceversa. The aim of the research is to qualitatively investigate the prerequisites for reading and writing (grip) in a sample of approximately 300 subjects, preschool and primary school teachers in pre-service training in an academic setting. Results: 52.9% of the sample has a functional grip; On average, 19% of children in each category reported having received instruction from preschool and primary school teachers, or parents, and 38% did not know; 55.5% predominantly wrote in cursive, while the remaining 45.5% wrote in capital letters. Conclusions: Physical education and movement science are a core curriculum subject and active contributors to the development of prerequisite academic skills: reading and writing skills (gripe and visual-spatial orientation) and executive functions, in accordance with the educational needs of children of digital natives in the third millennium. Physical education is based on evidence in sedentary lifestyles and reduced motor skills, due to cultural contexts (motor play has become digital sedentary play since early childhood) and lifestyle habits (use of devices and reduced functional motor skills for the cognitive and psycho-affective development of childhood).

Keywords: Physical education preservice education, primary school, fine motor development, prerequisites writing learning, gripe -spatial orientation

TRANSFORMING PHYSICAL EDUCATION THROUGH UDL: A COMMITMENT TO THE INCLUSION OF STUDENTS WITH SPECIAL EDUCATIONAL NEEDS (SEN) THROUGH ACROSPORT AND CREATIVE DANCE

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Abstract: Introduction This Master's Thesis examines the impact of a Physical Education learning situation designed under the principles of Universal Design for Learning (UDL). The project emerged from an initial observation during teaching practice, where minimal participation and limited interaction of students with SEN were identified during PE lessons. The proposal integrates Acrosport and Body Expression as inclusive pedagogical tools that combine cooperation and creativity to foster active and meaningful participation, as well as group cohesion. The main objective was to promote the inclusion of students with Special Educational Needs



(SEN) within their main-stream third-year secondary education class in a public high school in Lleida (Spain). **Methods** The study followed a mixed-methods design. Quantitative data were collected using the validated CAIPER-S questionnaire (Ocete et al., 2017), administered as a pre-test and post-test to the whole group. Qualitative data were gathered through a teacher field diary and semi-structured interviews conducted with the four students with SEN to explore their perceptions, experiences, and perceived barriers. Participants were 24 third-year secondary school students (aged 14–15), including four students with SEN. An 11-session intervention was implemented following UDL principles, offering multiple means of representation, action, and engagement (CAST, 2024). The final product consisted of a collective performance combining Acrosport figures and choreographic creation. **Results** The results showed a positive but modest impact on attitudes toward inclusion in Physical Education. Girls demonstrated significantly more favourable attitudes than boys, who initially presented lower scores. **Discussion and conclusions** The intervention led to improvements, particularly among boys without SEN, although changes were not statistically significant overall. Students with SEN and girls already displayed favourable attitudes in the pre-test, which explains the limited variation in post-test results. Qualitative findings highlighted the key role of Acrosport and Body Expression in fostering mutual support, emotional cohesion, and a sense of belonging, especially among students with SEN, who reported experiences of protagonism, safety, and peer recognition. Although the quantitative impact was moderate, the findings suggest that inclusive and expressive Physical Education designed through UDL principles can positively influence group dynamics and reduce participation barriers. However, the consolidation of favourable attitudes toward inclusion requires sustained interventions over time and whole-school involvement. The study supports the transformative potential of cooperative and expressive pedagogies in advancing inclusive Physical Education.

Keywords: inclusion, students with SEN, UDL, Acrosport, Corporal Expression.

THE IMPACT OF PROPRIOCEPTIVE EXERCISES ON STATIC AND DYNAMIC BALANCE IN FIFTH-GRADE STUDENTS: AN EXPERIMENTAL STUDY

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Abstract: Introduction: The 10-11 year age range (corresponding to 5th grade) represents a crucial developmental stage for balance, and integrating proprioceptive exercises into the physical education curriculum could significantly improve the development of students' balance. The hypothesis from which we started our research is based on the assumption that introducing proprioceptive exercises into the physical education lesson is sufficient to increase the level of static and dynamic balance of fifth grade students, the applied intervention being sufficient to produce a significant effect. **Methods:** This research was conducted between February 17, 2025, and May 30, 2025, in five schools located in Bacău County. An original program, integrated into physical education lessons (10-15 minutes per session), was applied to fifth-grade students. The experimental group included 121 students, with a matching control group of the same size. From March 3 to May 16, 2025, the experimental group participated in the original program integrated into physical education classes, whereas the control group followed the standard physical education curriculum. The final evaluation was performed from May 19 to May 30, 2025, followed by data analysis, interpretation, and the formulation of conclusions. The Y-balance test (YBT) and the four-position balance test served as the evaluation tools in the study. **Results:** The final results confirm that both categories of balance showed significant improvement ($p < 0.001$), with large effect sizes ($d > 1.0$), as follows: dynamic balance (YBT) increased by +3.82% / +4.41%, with effect sizes of $d = 1.81 / 1.72$ (VERY LARGE); static balance (Four-Position Balance Test) increased by +13.1%, with $d = 1.16$ (LARGE). **Discussion:** The proprioceptive intervention through the original program resulted in statistically significant adaptations ($p < 0.001$), with large effect sizes ($d > 1.0$). Static balance showed substantial improvement, reaching a ceiling effect, as evidenced by a dramatic increase from 1 student to 17 students achieving the maximum score in the single-leg stance position, reflecting a +1600% improvement. Additionally, dynamic balance displayed superior gains, with very large effect sizes of $d = 1.81$ and $d = 1.72$ for the Y-balance test, indicating highly significant enhancements in both anterior and posterolateral reach distances. These results demonstrate that the intervention led to substantial and statistically significant improvements in both static and dynamic balance, particularly with regard to the static balance ceiling effect.

Keywords: proprioceptive exercises, dynamic balance, static balance, fifth-grade students.



EFFECTS OF PRODUCTION TEACHING STYLES-BASED INTERVENTION ON THE DEVELOPMENT OF MOTOR COORDINATION AND PHYSICAL LITERACY: A PILOT STUDY

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Abstract: Introduction: Developing motor coordination and motor competence represents one of the most important objectives of Physical Education programs, as it is inextricably linked to higher levels of physical activity and the prevention of sedentary behaviors. This study explores the effects of an experimental intervention based on teaching styles variations and practice variability on motor coordination, physical literacy and overall motor competence in secondary school students. Utilizing an experimental approach, the study evaluates whether production teaching styles-based interventions can significantly increase the quality and quantity of basic motor patterns in secondary students, while also considering gender differences and baseline anthropometric variables. Methods: The study involved a sample of 54 students (21 males, 33 females; ages 11–12) from a secondary school in the province of Lecce, Italy. Students were divided by gender, and anthropometric data (weight, height, BMI) were collected. Motor performance was assessed at baseline (t0) and post-intervention (t1) using standardized tests: the Plate Tapping test, the 10x5m Shuttle Run, and the Harre Circuit. Physical Literacy was evaluated using the PlaySelf questionnaire. Additionally, criterion-referenced skills with specific learning descriptors were used to assess motor learning. The 4-month experimental intervention was based on teaching styles-variations, with a specific focus on divergent discovery and guided discovery. Statistical analysis, including Student's t-tests, was performed to evaluate pre- and post-intervention differences ($p < 0.05$). Results: Baseline and post-intervention analyses revealed significant gender differences. Males demonstrated better performance in the 10x5m Shuttle Run and the Harre Circuit, while females scored higher in the Plate Tapping test and the PlaySelf questionnaire. Following the experimental intervention, motor coordination and the quality of basic motor patterns improved across all participants, as evidenced by increased scores in the criterion skills and their respective learning descriptors. Specifically, in the Harre Circuit, males improved their time from 24.10 ± 9.68 s to 22.52 ± 9.16 s, and females from 26.94 ± 6.04 s to 21.80 ± 4.30 s. Discussion: The findings indicate that the experimental intervention based on production-teaching styles variants significantly improves motor coordination and the quality of movement in school-aged children. While gender differences in specific motor tasks exist—likely influenced by biological factors and socially mediated activity preferences—structured, variable practice benefits both sexes. The study highlights the efficacy of using a mixed quantitative and qualitative-criterial evaluation methodology. Ultimately, curricular physical education that prioritizes movement quality and variability is an essential tool for enhancing motor competence and promoting long-term physical activity.

Keywords: Physical Education; Teaching Styles; Physical Literacy; Motor Coordination.

DIGITAL EDUCATIONAL MATERIAL IN PHYSICAL EDUCATION: THE CASE OF GREEK TRADITIONAL DANCE

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Abstract: Introduction: The teaching of Greek traditional dance (GTD), a core component of Physical Education (PE) in Greece, remains underexplored within distance education (DE). The need for learning environments that combine the distinctive characteristics of DE and teaching of GTD led to the development of an integrated digital educational material (EM) designed to function both autonomously and complementarily. This paper presents this EM, grounded in a unified theoretical and pedagogical framework for teaching GTD through DE in Greek PE for students aged 11–12. Methods: For this instructional design study, a literature review was conducted to identify theoretical and pedagogical frameworks supporting the development of distance teaching of GTD between 2003



and 2025 using the keywords: distance education, Greek traditional dance, and distance teaching of Greek traditional dance, across scientific databases (Google Scholar, ERIC, Arts & Humanities), institutional repositories, and conference proceedings. Among the 31 relevant publications identified to GTD teaching in DE, only one provided a fully theoretically grounded framework, integrating DE principles, West and Lionarakis typology for designing distance EM, morphological method of teaching GTD, and Bloom and Krathwohl's taxonomy of educational objectives (Συντιγάκη & Κουτσούμπα, 2025). Results: Based on this framework, a nine-week digital distance EM was developed for teaching students aged 11–12 GTD. Its design followed essential quality criteria ensuring validity and coherence, such as content validity (scientific accuracy, conceptual clarity), pedagogical coherence (each unit in the EM builds progressively from the possibilities of support on basic structural patterns of GTD and their combinations), guidance (study guide, timeline, learning outcomes), interaction and active engagement (activities of observation, self-assessment, creative expression, critical thinking, incorporation of artistic elements, use of artificial intelligence, discussion forum), and autonomy and flexibility (personalization in learning time, space and pace). Aligned with Mayer's (2017) principles of multimedia learning, this digital EM includes short presentations, interactive dance-teaching videos from various Greek regions, digital narratives on their ethnographic and historical background, multimedia elements and narrative characters using accessible language and a student-friendly tone aligned with all of the above. Discussion: Distance teaching of GTD constitutes an innovative yet underdeveloped field of study. This work addresses a significant research gap by offering a theoretically grounded proposal, whose future implementation and evaluation can provide valuable insights to further strengthen PE within digital learning environments.

Keywords: distance teaching and dance, distance teaching of Greek traditional dance, design of digital educational material for teaching Greek traditional dance

ENJOYMENT AND PHYSICAL EDUCATION: EXPERIMENTAL STUDY FOR ENHANCING QUALITY PERFORMANCE IN PRIMARY PHYSICAL EDUCATION

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Abstract: Introduction: Enjoyment, defined as a positive and effective response to physical experience, is a recurring focus in the scientific literature, and it's a key aspect of promoting learning and motivation in physical activity (Scanlan & Simons, 1992). The content of this research concerns the analysis of the relationship between enjoyment and qualitative performance in school based physical education (PE) in childhood. Methods: experimental research, sample 39 children (8–9 years old) in a northwest Italian primary school. The experimental group (EG) and a control group (CG). The EG was involved in an 8-week PE project, designed with the aim of increasing the quality of Physical Education (QPE) through deliberate evidence-based programs. The CG continued with a traditional design PE project based on the free game. The instruments were the TGMD (Test Gross Motor Development—quality skills assessment) (Ulrich, 1985) and the Physical Activity Enjoyment Scale (PACES) (assessment enjoyment level) (Carraro et al., 2008). The validated tests were administered at the EG and CG pre-post (after 8-week intervention) and follow-up (after 8-week post) according to the Physical Education Evidence-Based (Cazzoli, 2014). Results: The results showed a significant increase in the experimental group's scores (TGMD: +30%; PACES: +29%); in the control group, the changes scores were less significant (TGMD: +2%; PACES: +5%). Moreover, a positive correlation was found between the changes in the mean scores of the two variables in the three survey times (CG $r = 0.966939$ - EG $r = 0.947469$). In contrast, when examining individual scores, analysed at only one survey time, no correlation was found (first survey, $r = 0.073386$). Discussion: First, the improvement in qualitative performance was shown to be correlated with the increase in PACES scores. Therefore, increased feelings of enjoyment indeed played a decisive role in the improvement of TGMD scores in the experimental group. Second, the single PACES test score is not predictive in the case of qualitative performance in physical education. That is, having a high score on the PACES does not directly equate to being more proficient than those with a lower score. The results of the research suggest further deepening the relationship between PE and evidencebased data to design effective and efficient PE programs, guarantee educational quality for students in primary school, and respond to educational needs and challenges related to motor development and the opportunities of physical activity for the enhancement of executive functions and cognitive skills.

Keywords: enjoyment, quality physical education, primary school, performance, motivation



PERFORMANCE DYNAMICS IN STRENGTH SPORTS: A COMPARATIVE AGE-RELATED ANALYSIS OF ELITE MALE MEDALISTS

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Abstract: This study examines performance dynamics in strength sports through a comparative analysis of elite male athletes in weightlifting, powerlifting, and freestyle wrestling. The research focuses on athletes who placed in the top three at the Olympic Games, World Championships, and European Championships over the last ten years. The main aim is to identify age-related patterns in elite performance development, including the age of training initiation, the age of first major international success, and the age of peak achievement. The study is designed as a retrospective analytical investigation based on official competition protocols and federation results books, which are used as primary sources for performance outcomes and medal placements. Athlete biographies, federation profiles, interviews, and verified public records are used as secondary sources to estimate training start age and support biographical validation. A structured database is being developed to integrate event-level and athlete-level variables, including competition type, year, weight category, medal position, performance result, date of birth, and training initiation age. The planned statistical procedures include descriptive analysis, comparative profiling across sports and competitive levels, and trend analysis of age-performance relationships. In addition, probabilistic models will be applied to explore how delayed training initiation or later progression milestones may influence the likelihood of achieving top international success. The expected contribution of the study is the identification of sport-specific and cross-sport regularities in long-term performance development, with practical implications for talent identification, athlete selection, and evidence-based coaching methodology in strength sports.

Keywords: strength sports; performance dynamics; peak performance age; talent identification; weightlifting; powerlifting; freestyle wrestling

YOUTH SUBCULTURES IN CONTEMPORARY SPORT: IDENTITY, BELONGING AND EXPRESSION

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Abstract: Sport constitutes a significant social phenomenon that consolidates diverse social, cultural, religious, and ethnic groups. Youth sports subcultures represent a relatively recent social phenomenon, comprising predominantly young individuals seeking self-expression through the pursuit and refinement of specific sporting activities. The present study focuses on the value system of young people, their aspirations, and their motivation for self-realization through sport. The study highlights the integrative role of sport in relation to diverse youth subcultures and the construction of a distinct youth identity through sporting participation. The primary objective of the study is to examine sports subcultures in Bulgaria, with particular emphasis on young people engaged in non-mainstream sports. The main research methods include a review of scientific literature based on existing studies; field research conducted during sporting activities; and in-depth interviews with representatives of youth subcultures. For the purposes of the standardized interview, a set of questions was developed based on specific indicators addressing identity and the position of respondents within their respective youth subcultures. A total of 22 representatives from the following youth sports subcultures participated in the interviews: windsurfing, parkour, breakdance, sport fishing, and calisthenics. All interviews were conducted face-to-face and audio-recorded with the consent of the respondents. For analytical purposes, content analysis was employed as a research method in the social sciences. Due to the qualitative nature of the study and the small sample size, no quantitative statistical methods were applied. The findings indicate that all participants perceive themselves as members of a sports community. Sports subcultures foster a strong sense of identity among youth, assist in overcoming everyday challenges, and exert a positive influence on personal development and professional realization. Respondents specify various motivations for engaging in sport, including personal interest and the influence of role models. Sport facilitates and social interaction support the formation of friendships, and provide a sense of purpose. Non-formal sports education within subcultural communities creates conditions for pedagogical influence and supports the accumulation of sporting experience, leading to improved athletic realization and overall educational development among young athletes. Financial and organizational challenges remain significant for sports subcultures. It can be concluded that belonging to a sports subculture is deeply integrated into the lives of young people, who find it difficult to envision their lives outside this subcultural context. The study underlines the necessity of institutional support and funding for the sustainable development of these communities.

Keywords: youth, subculture, identity, in-depth interview, content analysis



QUALITY PHYSICAL EDUCATION IN INITIAL TEACHER EDUCATION: GOOD PRACTICES AND STRUCTURAL CHALLENGES IN PRIMARY SCHOOL

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Abstract: This study investigates the quality of physical education (PE) experienced by pre-service teachers during their primary school internships in the Piedmont region, Italy. Framed within the international Quality Physical Education (QPE) standards, the research focuses on inclusion, active participation, and the educational value of movement in kindergarten and primary schools. The analysis involves 96 fourth-year students from the Childhood and Primary Teacher Education Master's program at the University of Turin (A.Y. 2025/2026). Data collection relied on a customized version of the UNESCO (2020) Worldwide Survey of Quality Physical Education. This questionnaire utilized a mix of closed and open-ended items to capture trainee perspectives on teaching methods, school environments, and the practical constraints encountered during their internship. The findings highlight a clear presence of pedagogical "good practices." Respondents frequently reported the use of inclusive strategies, cooperative learning, and a focus on motor skill development. These results suggest that the theoretical principles of QPE are well-integrated into the trainees' teaching approach. Major weaknesses were identified in infrastructure and school organization, including inadequate scheduling and a cultural perception of PE as a "minor" or secondary subject. Furthermore, coordination issues between generalist teachers and external PE specialists remain a significant problem. These results point to a persistent "theory-practice gap." While the pedagogical intent of future teachers aligns with modern quality indicators, structural and cultural barriers continue to hinder the full integration of PE within the primary curriculum. These findings call for a deeper integration of PE training within initial teacher education programs to move beyond these systemic limitations.

Keywords: Quality Physical Education, Primary Education, Pre-service Teacher Training

AN INNOVATIVE APPROACH TO TEACHING GREEK TRADITIONAL DANCE IN SCHOOL PHYSICAL EDUCATION: THE MUSEUM KIT AS A TOOL FOR THE DEVELOPMENT OF VISUAL, CULTURAL, AND DANCE LITERACY

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Abstract: Introduction: Contemporary physical education in primary education promotes multimodal forms of learning that integrate motor, cognitive, and sociocultural dimensions. The present study explores an innovative teaching intervention focusing on the instruction of Greek traditional dance in school physical education through the use of a museum kit from a museum of refugee Hellenism. The intervention was designed as an interdisciplinary learning experience combining physical education objectives in primary education with the general learning outcomes of museum education. Particular emphasis is placed on the role of museum visual material in fostering students' visual, cultural, and dance literacy (Koutsouba, 2026). The study aims to investigate the contribution of museum-based material to students' learning experiences, the development of motor skills, and the enhancement of cultural understanding among students aged 11–12. Methods: The study was conducted within the context of physical education classes with students aged 11–12 and adopted a qualitative action research approach (Avgitidou, 2011) with case study characteristics. The instructional program included the teaching of Greek traditional dance supported by the use of a museum kit, which functioned as a tool for experiential and inquiry-based learning, linking bodily movement with historical and cultural contexts. Data were collected through systematic observation, student reflective interviews, group discussions, and feedback from a critical friend. Data analysis was organized according to the general learning outcomes (knowledge and understanding, skills, attitudes, and participation) of museum experience (Dodd & Jones, 2009), in conjunction with educational learning objectives and broader educational learning goals. Results: The findings indicate that the integration of



museum visual material enhanced students' learning experiences, supporting the development of motor skills, collaborative practices, and positive attitudes toward physical activity. The museum kit facilitated students' understanding of the historical and symbolic dimensions of traditional dance, contributing to the development of visual and cultural literacy. Furthermore, students demonstrated increased capacity to interpret and embody cultural meanings through movement, reflecting the development of dance literacy. Discussion: The results suggest that integrating museum-based visual resources into dance teaching enriches physical education by connecting movement learning with cultural interpretation. The intervention highlights the pedagogical value of multimodal approaches that combine visual analysis, cultural context, and embodied practice. Practically, the study proposes an interdisciplinary educational model for teaching Greek traditional dance that enhances physical activity, literacy development, and participatory learning. These findings support the integration of museum resources into school physical education as an innovative and meaningful pedagogical strategy.

Keywords: dance, education, museum education, multimodal learning, participatory learning experience

SPORT FACILITIES AND PHYSICAL EDUCATION: AN INTERNATIONAL COMPARATIVE STUDY OF INSTITUTIONAL FRAMEWORKS AND TECHNICAL SPECIFICATIONS FOCUSING ON THE GREEK CONTEXT

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Abstract: School sports infrastructure constitutes a critical material factor for the implementation of Quality Physical Education. The adequacy and safety of facilities directly affect students' physical health and well-being, while poor infrastructure conditions often undermine the pedagogical objectives of the subject. The purpose of the present study is the comparative investigation of the institutional framework and technical specifications governing school sports facilities in Greece with a view to assessing their alignment with international standards and best practices from other countries. A comparative analysis of policy documents and technical guidelines was conducted. Official records of Ktiriakes Ypodomes S.A., circulars of the Ministry of Education, the Greek legislative framework (Law 1566/1985, Law 3463/2006), as well as reports from international organizations (UNESCO, WHO, Eurydice) were examined. In addition, international technical safety standards and equipment inspection guidelines were reviewed. The study revealed a significant discrepancy between the Greek reality and international standards. While countries such as France and Germany have established rigorous periodic inspection protocols and digital safety registries, Greece has not implemented a cohesive and consistent inspection framework. A review of the literature reveals a paucity of research on the topic, yet there is sufficient evidence to suggest that indoor facilities are deficient in several key areas. These deficiencies are compounded by limited funding, and unequal facility quality, resulting in restricted teaching possibilities and fewer opportunities for students' active participation. Conversely, international practices advocate for the multifunctional use of sports facilities by the community and modernization models that secure maintenance resources and enhance accessibility. The Greek educational system faces significant challenges in managing Physical Education infrastructure and equipment, with multiple gaps affecting the quality of education provided. These include a disconnect between technical specifications, the absence of national standards, urban planning constraints, lack of maintenance, educational inequalities, and the absence of measurable indicators. Recently, the Greek Ministry of Education, through a Ministerial Decision, aims to overcome some of these challenges by introducing a new funding initiative aimed at strengthening Physical Education in 4.550 primary and secondary schools, providing modern equipment and digital educational content. A comprehensive modernization of sports infrastructure in Greece is imperative, entailing the establishment of a centralized digital registry system for sports facilities and equipment, complemented by regular maintenance inspections. The convergence with international safety standards and the adoption of innovative design principles will contribute to upgrading Physical Education, modernizing sports infrastructure, improving lesson quality, and transforming the school into a safe hub for public health promotion. Moreover, investments in sports infrastructure for Physical Education yield long-term benefits that significantly exceed the initial investment cost.

Keywords: Physical Education, school sports infrastructure, institutional framework, equipment safety, facilities.



TECHNOLOGY AND THE MEANING OF SPORT: A PHILOSOPHICAL PERSPECTIVE

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Abstract: This presentation examines the role of technology in contemporary sport through the philosophical perspectives of Jacques Ellul and Albert Borgmann. Through philosophy of sport, the study is not limited to technological developments but also attempts to highlight their value assumptions and the ontological changes they bring to the understanding of sport. Rather than treating technology as a neutral instrument for performance enhancement, the paper approaches technological development as a transformative force that reshapes the values, criteria, and meaning of athletic practice. Ellul argues that technology operates as an autonomous system governed by the principle of maximum efficiency. In sport, this logic is reflected in continuous performance quantification, scientific training management, and the dominance of measurable outcomes as primary indicators of success. Borgmann, in contrast, distinguishes between "focal practices," which require engagement, discipline, and the cultivation of skill, and "devices," which deliver results through technological mediation. Sport, traditionally understood as a voluntary and embodied practice, risks being transformed into an optimized production system. The paper contends that technology does not merely modify the means of sport but also influences the structure of athletic experience and the definition of excellence. A critical and balanced integration of technology is therefore necessary to preserve the human-centered character of sport while acknowledging the benefits of innovation. In this sense, the presentation advances a normative philosophical reflection on how technological rationality reconfigures the very meaning of sport and athletic excellence.

Keywords: Philosophy of sport, technology, athletic experience, excellent

ADAPTIVE PHYSICAL THERAPY STRATEGIES FOR MAINTAINING QUALITY OF LIFE UNDER CHANGING HEALTH CONDITIONS

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Abstract: Introduction: Every individual has an optimal physical activity regimen that supports a satisfactory quality of life. However, substantial changes in baseline health parameters due to injury or illness often result in a decline in quality of life. In such cases, implementing specialized physical therapy and rehabilitation programs is essential to help individuals adapt to the altered functional state of their bodies. These programs—including individualized exercise regimens and modifications to daily living conditions—play a crucial role in maintaining quality of life following health changes. The aim of this literature review is to synthesize current evidence on physical therapy and rehabilitation strategies for this population and to evaluate their effectiveness in preserving or enhancing quality of life under changing health conditions. Methods: A systematic review of peer-reviewed publications was conducted using PubMed, Scopus, Web of Science, and Ukrainian scientific journals. Keywords included: "adaptive physical therapy," "rehabilitation," "quality of life," "functional adaptation," and "health status change." Selected studies focused on physiotherapeutic and rehabilitation interventions for individuals with functional impairments arising from injury or illness. The primary approaches to these interventions were analysed with the objective of improving participants' quality of life to a level that meets their individual needs. Results: The literature review indicates that specialized physical therapy and rehabilitation programs that integrate targeted physical exercises, functional tasks, and real-life adaptations are effective in maintaining satisfactory quality of life for affected individuals. Evidence demonstrates improvements in mobility, functional independence, self-efficacy, and engagement in regular physical activity. Basic physiological parameters, such as blood pressure and heart rate, also show positive trends among participants. Recent research conducted in Ukraine further highlights the value of individualized rehabilitation programs in restoring functional status and sustaining an adequate quality of life in individuals experiencing health changes. Discussion: The evidence supports the implementation of modern physical therapy and rehabilitation programs for individuals whose functional status has been altered by injury or illness. Individualized programs contribute to enhanced functional adaptation, sustained physical activity, and maintenance of a stable quality of life. Moreover, integrating adaptive physical therapy into long-term healthcare and rehabilitation frameworks may reduce disability rates, enhance resilience in specific populations, and improve overall well-being. Keywords: physical therapy, rehabilitation, functional adaptation, quality of life, literature review

Keywords: physical therapy, rehabilitation, functional adaptation, quality of life, literature review



ANTHROPOMETRIC AND AEROBIC CHARACTERISTICS OF FC SUTJESKA U17 FOOTBALL PLAYERS DURING THE PREPARATORY PERIOD

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Abstract: Anthropometric characteristics and aerobic fitness represent key components of physical performance in youth football. Profiling players during the preparatory period provides valuable insight into their developmental status and readiness for the competitive season. The aim of this study was to describe the anthropometric and aerobic profile of FC Sutjeska Niksic U17 football players at the beginning of the preparatory period and to explore potential relationship between selected physical variables. Eighteen elite male U17 football players from FC Sutjeska Niksic were assessed using a cross-sectional design. Body height was measured with an anthropometer, while body mass and body fat percentage were evaluated using a Tanita Bioelectrical Impedance Analyser (MC-980). Aerobic performance was assessed through the 30-15 Intermittent Fitness Test, and VO_2max was estimated using Martin Buchheit's equation. Descriptive statistics were calculated for all variables. Pearson correlation coefficients were additionally computed to examine associations between anthropometric characteristics and aerobic capacity. Players demonstrated a mean body height of 179.3 cm and a mean body mass of 65.2 kg. Mean body fat percentage was 10.1 %, indicating a favourable body composition profile at the start of the preparatory period. Estimated VO_2max averaged $52.5 \text{ ml} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$, reflecting appropriate aerobic capacity for elite youth players. A strong positive association was observed between body height and body mass, while relationship between VO_2max and anthropometric variables were weak. The variability in anthropometrics reflects differences in biological maturation typical for this age group. Despite this variability, average body composition and aerobic capacity values are consistent with published normative data for elite youth footballers. The weak association between aerobic capacity and body dimensions suggests that endurance performance may develop relatively independently of morphological characteristics during adolescence. FC Sutjeska Niksic players exhibit favourable anthropometric and aerobic characteristics at the beginning of the preparatory period. Cross-sectional profiling, supported by basic correlation analysis, provides practical benchmarks for individualized training and ongoing monitoring throughout the competitive season.

Keywords: FC Sutjeska Niksic, U17 football, anthropometric, aerobic, VO_2max , preparatory period

GENDER EQUALITY CHALLENGES IN PHYSICAL EDUCATION AND SCHOOL SPORTS: EVIDENCE FROM PUBLIC SCHOOLS IN EASTERN GEORGIA

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Abstract: Gender equality in education encompasses equal access not only to academic instruction but also to physical education and school sport, which play a crucial role in students' physical, psychological, and social development. This study investigates gender-related challenges affecting girls' participation in physical education in public schools in Eastern Georgia. The research was conducted between 2021 and 2023 and involved 592 physical education teachers from Tbilisi, Gori, Mtskheta-Mtianeti, Dusheti, Kakheti, and Kvemo Kartli. Data were collected using a structured questionnaire consisting of 22 questions and 86 response options and were analyzed using SPSS (version 21.0). Descriptive, comparative, and inferential statistical methods were applied. The findings indicate that although the majority of teachers recognize the importance of sport for both boys and girls, significant disparities emerge in participation patterns, particularly in upper grades. While girls' attendance in physical education classes is high in lower grades, it declines considerably during adolescence. Reported reasons include health-related issues, lack of interest, and persistent gender stereotypes that frame sport as predominantly male-oriented. Additionally, structural factors such as inadequate infrastructure, absence of sports halls, limited professional qualification standards, and non-transparent recruitment practices contribute to unequal participation opportunities. The study also reveals a professional aging trend among physical education teachers and inconsistencies in specialized qualifications, which may affect the quality and inclusiveness of instruction. Despite generally positive attitudes toward gender equality, the persistence of stereotypical beliefs about "feminine" and "masculine" sports suggests the need for gender-sensitive pedagogical approaches. The results underscore that achieving substantive gender equality in school sport requires comprehensive reforms, including infrastructure development, strengthened professional standards, transparent hiring procedures, and targeted programs aimed at sustaining girls' engagement in physical activity throughout adolescence.

Keywords: gender equality, physical education, school sport, girls' participation, gender stereotypes, education reform



TEACHING GREEK TRADITIONAL DANCE IN SCHOOL PHYSICAL EDUCATION. A PEDAGOGICAL APPROACH TO LIFE SKILLS DEVELOPMENT

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Abstract: The reform of the new physical education curriculum in Greek secondary education highlights the need for student-centred and holistic approaches that connect motor learning with students' personal and social development. Within this framework, the teaching of Greek traditional dance is called to move beyond the narrow reproduction of movements and to be linked with broader educational and pedagogical aims. The morphological teaching method of Greek traditional dance provides a structured framework for understanding dance through its morphological elements, while the Teaching Personal and Social Responsibility (TPSR) model supports the development of respect, effort and cooperation self-direction, leadership and transfer of learning. The aim of this study is to present how the combination of the morphological method of dance teaching and TPSR model forms a coherent didactic approach to teaching Greek traditional dance in upper secondary education, addressing motor, cognitive and social-ethical goals simultaneously. The study is implemented as an educational action research project within the context of physical education in upper secondary education. A total of 52 students participated in the intervention, implemented over 16 lessons. The intervention was designed on the basis of the logic of the morphological teaching method of Greek traditional dance, together with the levels of responsibility and teaching components of the TPSR model. Each lesson included awareness talk, physical activity plan, group meeting and self-reflection time at the end. For example, in one lesson students worked on basic structural dance patterns, identified their morphological organization and were invited to connect their behavior during the lesson with the concepts of respect, cooperation and personal responsibility. Results- Initial findings indicate that the combination of the two approaches strengthens active student participation, cooperation and the gradual assumption of responsibility during the lesson. The morphological teaching method facilitates a deeper understanding of dance structure and students' conscious engagement in the movement process, while the TPSR model provides clear pedagogical guidance for behaviour, decision-making and reflection. The combination of the morphological teaching method and the TPSR model appears to constitute a coherent and applicable framework for teaching Greek traditional dance in school physical education. Its significance lies in shifting the focus from the simple execution of movements toward understanding, participation and responsibility. This approach may contribute substantially to the pedagogical renewal of Greek traditional dance teaching in secondary education and to the cultivation of life skills through culturally meaningful movement content.

Keywords: Upper Secondary Education, Action Research, Personal and Social Responsibility, Student-centred Learning, Holistic Education.

TOWARDS PROFESSIONAL STANDARDIZATION IN THE ALBANIAN FITNESS SECTOR: THE CASE FOR A NATIONAL FITNESS INSTRUCTORS' ORDER

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Abstract: The regulation of fitness professionals and the governance of fitness centres remain highly heterogeneous across Europe and largely absent in Albania. International research and Euro-Atlantic institutional frameworks emphasize the importance of standardized education, professional certification, continuous training, and formal governance mechanisms to ensure service quality, occupational recognition, and public safety. The aim of this study was to analyse the current regulatory framework of the Albanian fitness sector and to compare it with European and international professional standards, in order to propose an evidence-based model for institutional reform. A comparative policy analysis was conducted, examining Albanian legislation related to sport, business management, vocational education, and public health, alongside European standards (EN 17229), professional guidelines from EuropeActive, NSCA, ACSM, and NASM, and higher education curricula offered by Albanian universities. In addition, private certification schemes operating in Albania were reviewed to assess their role in professional qualification. The analysis revealed that Albania lacks a formal legal framework



regulating the fitness profession, including the absence of a national licensing system, professional registry, mandatory continuing education, standardized operational criteria for fitness centres, and institutional professional governance. Fitness trainers currently operate under fragmented educational pathways, combining academic degrees and private certifications without unified legal recognition. In contrast, European countries implement partial regulatory systems based on professional standards, accreditation procedures, and operational requirements, although regulation remains inconsistent across the European Union. This regulatory vacuum in Albania facilitates rapid sector expansion and market accessibility but simultaneously generates significant risks, including inconsistent service quality, elevated injury potential, lack of professional accountability, and insufficient protection of public health. Furthermore, the absence of structured governance undermines professional identity, limits career progression, and weakens the credibility of fitness as a recognized profession. Based on these findings, the establishment of a National Fitness Instructors' Order is proposed as a central regulatory authority responsible for professional licensing, ethical oversight, continuing education credit systems, and role-based professional profiling (e.g., personal trainers, strength and conditioning coaches, group fitness instructors). Additionally, the introduction of legal standards for fitness centre management is recommended, including mandatory scientific leadership and academic qualification requirements for technical directors and sector managers. These reforms aim to enhance professional legitimacy, improve service quality, safeguard public health, and support the sustainable development of the Albanian fitness industry.

Keywords: fitness regulation, professional standards, governance, exercise professionals, Albania

THE IMPACT OF FAMILY CONFLICTS ON CHILDREN'S EMOTIONAL AND SOCIAL DEVELOPMENT AND THE ROLE OF THE SCHOOL PSYCHO-SOCIAL SERVICE

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Abstract: Family conflicts, particularly those between parents, represent one of the most significant risk factors for children's emotional and social development. Continuous exposure to tension, disputes, and overt or covert forms of conflict directly affects their psychological well-being, often resulting in anxiety, insecurity, lowered self-esteem, and difficulties in interpersonal relationships. The aim of this study is to analyze the impact of family conflicts on the emotional and social functioning of children, as well as to highlight the role of the school psycho-social service in identifying and managing these cases. The study is based on a mixed qualitative and quantitative approach. Data were collected through structured questionnaires with pre-university students, semi-structured interviews with teachers and psycho-social service specialists, as well as case analyses of situations addressed in the school environment. Data processing was conducted using descriptive and comparative analyses, aiming to identify links between exposure to family conflicts and observed psycho-social issues. The study findings indicate that a considerable proportion of students exposed to family conflicts display noticeable emotional and social difficulties. Approximately 60% report feelings of anxiety and insecurity, while over 50% exhibit decreased concentration and motivation in the learning process. Furthermore, challenges in peer interactions and tendencies toward social withdrawal or problematic behaviors were identified. Interventions by the psycho-social service, including individual counseling, group work, and collaboration with families, contributed to the improvement of emotional well-being and increased student engagement in school life.

Keywords: family conflicts, emotional development, psychosocial development, children, emotional safety, anxiety, problematic behavior

A STUDY OF PHYSICAL ACTIVITY HABITS OUTSIDE PHYSICAL EDUCATION CLASSES AMONG HIGH SCHOOL STUDENTS

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Abstract: The modern lifestyles pose a serious threat to the physical activity levels of adolescents. This global trend leads to a significant increase in sedentary behavior and various health-related complications among the youth. The aim of this study is to investigate and analyze physical activity habits outside of mandatory Physical Education and Sports classes among high school students (grades 8–12). The research focuses on identifying existing attitudes, motivations, and barriers to physical activity in order to outline the current situation and propose directions for its improvement. Furthermore, the study seeks to highlight the importance of extracurricular sports for the overall development of the personality. To achieve this objective, a survey was conducted among 351



students, along with interviews with Physical Education and Sports teachers from several regional cities in Bulgaria. Specialized literature was reviewed, and mathematical-statistical methods were applied. These methods allowed for a deep empirical understanding of the gathered data and a professional interpretation of the findings. The analysis of the results shows that a significant proportion of students engage in physical activity several times per week, demonstrating a positive attitude toward an active and healthy lifestyle. At the same time, a considerable percentage of students belong to risk groups, remaining insufficiently engaged or completely inactive. Statistical data confirm that family and peer environments are important factors in the development of sports habits. Social circles play a crucial role in shaping the long-term athletic interests of young people. The findings indicate that motivation is closely linked to personal satisfaction and social interaction, while lack of time and financial resources represent major barriers. The practical implications of the results highlight the need for stronger interaction between school initiatives and family support in order to optimize physical activity patterns and prevent sedentary lifestyles among adolescents. Such cooperation is vital for fostering a healthier future generation.

Keywords: physical activity, high school, students, habits, physical education

THE IMPACT OF PROJECT-BASED LEARNING BALL-HANDLING SKILLS IN PRIMARY SCHOOL PHYSICAL EDUCATION

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Abstract: The aim of this study was to compare the effectiveness of project-based learning (PBL) and a traditional teacher-led approach, focusing on the development of ball-handling skills within a basketball unit for 5th-grade primary school female students. The research sample consisted of an experimental group ($n = 12$) utilizing a project-based learning approach, while a control group ($n = 12$) followed a traditional teacher-led approach to teaching fundamental ball-handling skills in six PE classes. Motor skill levels were assessed using three specific tests: figure-eight dribbling (Test "8"), ball circling around the body (Test "Circling"), and a dribbling run (Test "Run"). The normality of data distribution was verified using the Shapiro–Wilk test. Because several datasets did not meet the criteria for normal distribution, a combination of parametric and non-parametric statistical methods was employed. For intra-group comparison (pre-test vs. post-test), the paired t-test or Wilcoxon signed-rank test was used. For inter-group comparison, the independent t-test or Mann-Whitney U test was applied depending on the data distribution. Effect size was calculated using Cohen's r . The results indicated that the experimental group achieved statistically significant improvements in all three monitored parameters: Test "8" ($p = 0.021$; $r = 0.7$), Circling ($p = 0.009$; $r = 0.9$), and Run ($p < 0.001$; $r = 1.0$). In the control group, significant improvement was recorded only in Test "8" ($p < 0.001$; $r = 1.0$), while the Run test showed only a trend toward improvement ($p = 0.052$). In the inter-group comparison of post-test results, a statistically and practically significant difference in favor of the experimental group was found in the Circling test ($p = 0.021$; $r = 0.49$). No significant differences between groups were found in the Run test or Test "8" ($p > 0.05$). The findings suggest that project-based learning provides a more comprehensive impact on motor development and technical proficiency in ball-handling compared to the traditional teacher-led approach. This study was supported by the Slovak Scientific Grant Agency (VEGA) under grant number 1/0748/26, titled "Project-Based Learning in Physical and Sport Education and Its Impact on the Motor, Cognitive, and Affective Development of Pupils in Primary and Lower Secondary Education".

Keywords: basketball, ball-handling, project-based learning, primary school, physical education.



REFLECTIVE PEDAGOGIES IN MEANINGFUL PHYSICAL EDUCATION: EXPLORING TEACHERS' PRACTICES AND PROFESSIONAL LEARNING

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Abstract: Introduction: Meaningful Physical Education (MPE) is a pedagogical approach that prioritizes students' personally significant learning experiences by emphasizing features such as fun, social interaction, challenge, motor competence, and personally relevant learning relevance (Beni, Fletcher & Ní Chróinín, 2017). Central to this approach is the use of reflective and democratic pedagogies aiming to create educational setting that supports hearing students voice and encourage making personal connections to their learning experiences. Reflective pedagogies in PE encompass a range of strategies, including structured prompts, discussion, written reflections, and visual or movement-based tools, and they support both student learning and teacher professional development. Reflective practice is therefore considered a key pedagogical element within the framework of MPE, as it encourages students to make explicit connections between their experiences and their developing identities as learners, providing teacher's feedback for their teaching. Presented study elaborates the use of reflective pedagogies by three PE teachers from North Macedonia, elaborating on different reflective practices, perceived impacts on students' engagement and teachers' professional growth within the framework of MPE. Methods: The research team was consisted of three PE teachers from different school in different cities in North Macedonia. Following a six-month training program on Meaningful PE as part of the Champions in MPE for Inclusion and Diversity project, teachers implemented the principles of MPE with a focus on reflective pedagogies. The teachers employed a variety of reflective approaches adapted to students' age and context. Data were collected through semi-structured interviews with each teacher, including reflections on their classroom practices, students' responses, their own self-reflection processes, and collaborative reflective discussions conducted in focus groups with the other two teachers. Interview transcripts were analyzed using qualitative thematic analysis. Results: Teachers reported a variety of reflective practices, including short reflective prompts at the end of the lesson, brief in-the-moment questioning during activities, written reflections, visual tools such as emoticon cards, used particularly with younger children, movement-based satisfaction scales etc. Findings indicate positive shifts in students' engagement with reflection over time, characterized by greater openness, increased willingness to share perspectives, and more thoughtful contributions. Teachers also reported increased pedagogical flexibility, deeper self-awareness, and enhanced professional confidence, particularly through collaborative reflection with colleagues. Discussion: The study highlights the potential of structured and age-appropriate reflective pedagogies to strengthen both student voice and teacher professional learning within Meaningful PE contexts.

Keywords: Features Meaningful PE, reflective pedagogies, students voice, professional learning

RETHINKING TEACHER EDUCATION FOR COLLABORATIVE PE: PREPAREDNESS AND CPD NEEDS IN TANDEM TEACHING CONTEXTS IN NORTH MACEDONIA

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Abstract: Introduction: In recent years, tandem teaching is recognized as approach that contributes to the quality in physical education (PE) teaching ensuring regular delivery of PE lessons, improved engagement and activity of students etc. As a model of shared professional responsibility, successful implementation of tandem teaching depends from competences, communication and preparedness of teachers and coaches working within the tandem. This requires specific pedagogical, interpersonal, and organizational competencies that may not be sufficiently addressed in initial teacher education (ITE). Presented study aims to explore differences between generalist teachers and PE specialist working in tandem teaching regarding their self- perceived preparedness for the key



aspects of PE teaching during their initial education, to identify their continuing professional development (CPD) needs related to this model of collaborative practice. Methods: The study sample included 200 generalist teacher and 104 PE specialist currently engaged in tandem teaching in schools across different cities in North Macedonia. Data were collected using a questionnaire consisting of 11 items reflecting different dimensions of tandem teaching. Each item was rated on a five-point Likert scale. In addition, an open-ended question was included to capture teachers perceived CPD needs for effective tandem teaching. Data were analyzed using descriptive and inferential analyses (Chi- square tests), while qualitative responses were analyzed using thematic analysis to identify recurring themes related to professional learning needs. Results: Preliminary findings indicate differences in self – perceived preparedness in different areas between both group of teachers, particularly in knowledge for child development, pedagogical approaches and teaching methods. The qualitative data highlight a strong need for CPD programs focused on work with specific student groups, models of effective collaborative practice in PE contexts, specific subject matters including holistic learning through PE and age – appropriate PE contents, new approaches in teaching PE and design of supporting materials Suggested topics align with current societal trends and address challenges relevant to students' everyday lives, potentially impacting both students and teachers. The findings suggest that tandem teaching requires explicit preparation during ITE and sustained, practice-oriented CPD. Implications for curriculum design in PETE programs and for the development of targeted professional learning initiatives are discussed.

Keywords: physical education, tandem teaching, teacher preparedness, initial teacher education, continuing professional development, collaborative practice.

STATE OF MOTOR ABILITIES IN PRESCHOOL CHILDREN

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Abstract: The age period between 3 and 7 years, defined by numerous authors as preschool age, is crucial for the overall development of children and their health status. In early childhood, the fundamental motor skills and habits are formed, which exert a long-term influence on children's motor activity as well as their physical and cognitive development; the foundations of personality development are also established during this stage. Numerous authors report that the level of motor development exerts a complex influence on the formation of the different aspects of the child's personality. In this context, the present study aimed to determine the level of development of the basic motor abilities in preschool children. A total of 571 children were examined, including 287 aged 6 years and 284 aged 3 years. The participants were tested through nine motor tasks, by means of which the state of the different manifestations of their motor abilities was assessed. The nine motor tasks were selected and subsequently validated as part of our authorial research aimed at diagnosing motor abilities in preschool children (Naydenova et al., 2023). Testing was conducted once in six kindergartens located in the city of Sofia. The obtained results were subjected to mathematical–statistical processing using the software product IBM SPSS v.23. The data were analysed through variation and comparative analyses. The findings indicate an uneven development of the individual motor abilities, with a proportion of children demonstrating significantly lower performance levels. A substantial imbalance between the different components of motor abilities in preschool children was identified. In conclusion, the need for targeted pedagogical approaches and programs to optimise motor development in preschool-aged children is emphasised. The results may be used to improve physical education practices and develop effective strategies to increase children's motor activity.

Keywords: preschool, children, motor abilities, physical activity, motor development

COMPARATIVE ANALYSIS OF THE ACUTE EFFECTS OF DYNAMIC AND STATIC WARM-UP PROTOCOLS ON THROWING PERFORMANCE IN TRACK AND FIELD ATHLETES

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Abstract: The pre-competition preparation phase is of critical importance in terms of maximizing athletic performance and minimizing the risk of injury. The primary aim of this study was to comparatively examine the acute effects of different warm-up protocols (static and dynamic) on competition performance in track and field throwing events. A total of 12 voluntary youth athletes (4 males and 8 females), who were actively involved in throwing events and followed a regular training schedule of four days per week, were included in the study (Mean Age: 12.75 ± 0.75 years; Height: 164.08 ± 5.66 cm; Weight: 56.41 ± 11.49 kg). Within the scope of the research,



the athletes first performed a 5-minute low-intensity jog. Subsequently, two different protocols including branch-specific routine warm-up methods were implemented in separate sessions. In the first session, a static warm-up protocol consisting of 20 movements was implemented, with each movement lasting 10–15 seconds followed by a 10-second rest interval. In the second session, a dynamic warm-up protocol of similar volume was applied. Each warm-up session was standardized to last a total of 15 minutes. In accordance with the rules established by the World Athletics (formerly IAAF), 2 warm-up throws and 6 competitive throws were granted to the athletes immediately after both protocols, and the best throwing distance was recorded as the performance indicator. Due to the sample size and data distribution characteristics, the Wilcoxon Signed-Ranks Test, a non-parametric analysis, was utilized. According to the analysis results, a statistically significant difference was found between the static and dynamic performance scores of the participants ($Z = -2.197$; $p < 0.05$). Considering the mean ranks, dynamic performance was found to be significantly higher than static performance. These findings indicated that dynamic warm-up optimized neuromuscular activation and muscle temperature more appropriately for explosive power performance. Unlike static stretching, dynamic routines more effectively supported the sudden and high-intensity motor unit recruitment required in throwing events. In conclusion, it was determined that dynamic warm-up created statistically significant and superior results in performance outputs in track and field throwing events ($p < 0.05$). This study demonstrates that prioritizing dynamic warm-up models in pre-competition routines, especially for developing youth athletes, is a critical strategy for maximizing performance.

Keywords: Athletics, Warm-up Protocols, Throwing Events, Dynamic Stretching, Performance

WELLNES CULTURE IN THE PEDAGOGICAL INTERACTION FAMILY-KINDERGARTEN-SCHOOL

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Abstract: This material has a scientific-applied nature, aimed at familiarizing the pedagogical audience with the influence of motivation for learning as a major factor in the formation of the child's personality and with the role of wellness culture in the pedagogical interaction between the family and kindergarten-school. The family is considered one of the main external factors motivating learning. At the preschool age, the development of wellness culture and pedagogical interaction begins, creating conditions in which the child and family can actively participate in this process, and the teacher can apply modern didactic technologies. Purpose: To establish the influence of family relationships on the development of motivation for learning and pedagogical interaction between family, kindergarten, and school. Tasks: To establish the influence of wellness development on the personality of children, the wellness relationship between family relationships, and the motivation for learning of children of preschool and primary school age. Methods: a study was conducted to establish the level of cooperation between teachers and parents based on a questionnaire survey. The research contingent consists of 25 parents of children from I, II, III and IV age groups in preschool age. Of the research contingent followed, 18 participants were women, representing 72% of the representative sample, and 7 were men, representing 28%. Results: it is necessary to support and stimulate interest in various motor activities of interest: outdoor games, role-playing games, competitive games, sports, excursions, workshops, art studios, theater, concerts and exhibitions, children's events and festivals, competitions, outdoor learning, karaoke, themed parties, yoga classes, hiking, archery, and cooking. It can be said that high in the hierarchy of the value system are the values related to security and stability. Conclusions: the most important thing is the support of the family and the teacher, which children must receive. Positive assessment and encouragement with rewards are important for their motivation and success, even when they do not show the expected result. In this way, they feel significant and valued in their environment, which is of particular importance for their internal sense of significance and a stimulus for continued cognitive development.

Keywords: wellness, culture, pedagogical, interaction, Family-Kindergarten-School

COMPLEX APPLICATION OF SELECTED PSYCHOLOGICAL MEANS FOR THE DEVELOPMENT OF STUDENTS' PHYSICAL QUALITIES

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Abstract: The study examines the effectiveness of integrating selected psychological tools into physical education lessons to enhance the development of key physical qualities in sixth-grade students. Two parallel classes (N = 58) from a secondary school in Stara Zagora, Bulgaria, were observed over two academic years and assigned to



experimental and control groups. Both groups followed an identical curriculum, training structure, and physical workload; however, the experimental group received additional psychological interventions, including visual aids, precisely formulated tasks, motivational verbal cues, competitive elements, and systematic self-monitoring of performance. Methods: a comprehensive test battery assessed speed, strength, explosive power, flexibility, and endurance at four measurement points. Results demonstrated significantly greater improvements in the experimental group across all indicators, with increases often two to three times higher than those of the control group. The findings highlight the substantial role of psychological means in stimulating motivation, enhancing cognitive engagement, and improving physical performance in school-aged children. The study supports the integration of psychological tools as an effective pedagogical strategy within physical education to optimise the development of physical qualities. Conclusions: the use of psychological tools contributes to more purposeful, more active, and more effective specialised work for the development of physical qualities. Psychological tools enhance students' awareness and engagement — an important prerequisite for effective work on developing physical qualities. Among the psychological tools applied in combination, the most effective influence was exerted by visual materials, the recording and reporting of results, and the precisely formulated task.

Keywords: physical education, motor qualities, school-aged children, performance development

EVALUATION TOOL FOR MEASURING KNOWLEDGE IN ROMANIAN PE CLASSES – DEVELOPMENT

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Abstract: Although Physical Education (PE) is traditionally associated with practical activities, theoretical knowledge related to movement, health, and physical activity represents an important component of students' learning. Understanding fundamental concepts can support more informed participation in physical activity and contribute to a broader educational role of PE within the school curriculum. Aim: The aim of this study was to develop and validate a standardized tool for assessing theoretical knowledge in PE among Romanian fifth-grade students, based on the content of the national PE curriculum and textbooks. Method: The instrument was developed following the principles of Classical Test Theory through a multi-stage validation process that included item generation, expert evaluation, pretesting, student interviews, and reliability testing. The questionnaire consisted of 25 items distributed across six thematic areas derived from PE textbooks. A large initial pool of items was generated by the research team and subsequently evaluated by three experts according to criteria related to clarity, relevance, and difficulty. Based on these evaluations, the most appropriate items were selected to form the first version of the instrument. The questionnaire was then pretested with students to identify potential comprehension issues, followed by cognitive interviews to clarify ambiguous terms. Reliability was assessed using a test–retest procedure with a 21-day interval between administrations on a separate sample of students. Results: The expert evaluation phase demonstrated strong internal consistency across the evaluation dimensions, with Cronbach's alpha values of 0.945 for item clarity, 0.911 for answer clarity, 0.871 for item difficulty, and 0.956 for item relevance, indicating high agreement among reviewers. The final instrument consisted of 25 items selected from a large initial item pool. Pretesting indicated that the questionnaire was generally clear and suitable for the target age group, with only minor misunderstandings related mainly to unfamiliar terminology rather than unclear wording. The reliability analysis showed a strong positive correlation between the test and retest scores ($r = 0.94$, $p < 0.05$), demonstrating excellent temporal stability of the instrument. In addition, the paired-samples t-test conducted between the two administrations ($t(30) = -5.375$, $p < 0.001$) confirmed the consistency of the results across repeated measurements, supporting the reliability of the questionnaire for assessing theoretical knowledge in PE classes. Conclusion: The study resulted in the development of a valid and reliable tool for assessing theoretical knowledge in PE among Romanian fifth-grade students. The instrument demonstrated high levels of clarity, relevance, balanced difficulty, and strong reliability indicators. As a result, it can be used as a standardized tool for evaluating students' theoretical understanding of PE content in both educational research and school practice.

Keywords: physical education; theoretical knowledge; education; secondary school; tool

QUANTITATIVE ANALYSIS OF MANAGEMENT IN OBTAINING SPORTS PERFORMANCE – LITERATURE STUDY

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Abstract: Introduction: Research on quantitative management and sports performance in sports clubs has grown significantly. Effective management, using scientific approaches and comprehensive quality criteria, is essential for sports clubs to achieve their goals and optimize athlete development. Scope: This study analyzes the management of financial resources within sports clubs, trying to identify the relationship between allocated budgets and achieved sports performance. In other words, how is the relationship between invested funds and achieved competitive results reflected in the specialized literature. Method: The research was conducted between November 2025 and February 2026 by analyzing the specialized literature on the subject of sports management. Bibliographic sources from the period 2000 -2025 were identified. International databases were queried. These were Scopus, ScienceDirect, Web of Sciences, Ebsco, CrossRef, ProQuest. The choice was because of perspective of the standard in field of Sports Science and Physical Education from Romania. The Google Scholar and Index Copernicus databases were also queried, as they are accessible databases for the study of specialized literature. The search was carried out according to a set of keywords, specific to the field studied. The inclusion criterion was that the topics addressed by the research should refer to management in sports management and sports performance. Results: The databases offered a large body of literature to analyze aspects related to the role of management in achieving sports performance and the relationship between them. 743 sources were identified that could be considered in agreement with the researched subject. Then these were refined and the complete articles that met the inclusion criteria were retained. In this way, a number of 58 articles that include information of a financial nature, budget, expenditure distribution and performance obtained by sports clubs were retained for this review. Discussions: "Data Envelopment Analysis (DEA) has become a widely used quantitative measure of the efficiency of sports clubs across disciplines. The techniques allow clubs to compare performance with the efficient front and identify opportunities for optimization of the analysis as efficient as possible convert financial and organizational resources into sporting results. Research reveals a complex relationship between financial investments and sporting performance in clubs, with a strong correlation found mainly among top clubs, while mid-tier clubs often demonstrate superior financial efficiency. Strategic management practices and investments in talent development emerge as moderating factors influencing both sporting success and economic performance. Conclusions: Sports clubs are increasingly embracing quantitative methods and diverse analytical applications beyond traditional statistical approaches, including data analysis for marketing, player performance and strategic decision-making.

Keywords: sports management, state clubs, public budget, sports performance, forecasting algorithm, financial efficiency, transparency.

CLINICAL EVALUATION OF POST-SURGICAL KINESITHERAPY AND REHABILITATION IN PATELLAR LIGAMENT RECONSTRUCTION - PILOT CASE

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Abstract: Background: The patellar ligament is a vital component of the knee's extensor mechanism, serving as the bridge between the patella and the tibial tuberosity. When this structure is compromised, the ability to maintain an upright posture and execute a normal gait cycle is severely diminished. This study evaluates a 24-year-old male patient following surgical reconstruction (tendinoplasty) of the right patellar ligament. At the start of the clinical observation, the patient exhibited a restricted Range of Motion (ROM) with an initial knee flexion of only 180°C and was dependent on a hinged knee brace for joint stability. Method: The rehabilitation strategy followed a structured 30-week protocol, consisting of three sessions per week. The intervention focused on restoring the integrity of the infrapatellar region through specialized physiotherapy, including laser therapy and "Deep Oscillation." The kinesitherapy program prioritized the gradual loading of the patellar ligament through isometric contractions, followed by isotonic strengthening, myofascial release, and progressive proprioceptive training to stabilize the knee joint during movement. Results: Post-intervention assessments confirmed substantial functional recovery. Objective goniometric measurements showed a significant increase in knee flexion, progressing from the initial 10° to 79°. Subjective pain levels, measured via the Visual Analogue Scale (VAS), dropped from a high of 6.5 to a 2. Additionally, the "Timed Up and Go" (TUG) test showed a remarkable improvement in dynamic balance and speed, decreasing from 21.43 seconds to 7.45 seconds. Conclusion: The results suggest that a targeted, individualized kinesitherapy program is highly effective for the functional restoration of the knee joint following patellar ligament repair. The combination of manual therapy and progressive loading significantly enhanced the patient's mobility and lower limb stability.

Keywords: Patellar ligament reconstruction, Postoperative rehabilitation, Kinesitherapy, Deep Oscillation therapy, Functional recovery.



THE INFLUENCE OF PHYSICAL EDUCATION LESSONS TAUGHT BY TEACHERS WITH DIFFERENT PROFILES ON THE MOTOR ABILITIES OF 8–9-YEAR-OLD PUPILS

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Abstract: Physical education at the primary level plays a key role in the development of basic motor skills, social competencies, and healthy habits. Early school age is a critical period for building motor culture that accompanies the individual throughout life. In Bulgarian practice, physical education classes are often led by teachers who are non-specialists in physical education and sport. There is a tendency for PE lessons to be assigned to primary school teachers without a specialized methodological profile, which limits the targeted development of motor skills and the quality of instruction. The aim of the study is to determine the influence of the teacher's professional profile on specific parameters of motor development in 8–9-year-old pupils. To achieve the aim, the study was conducted during the 2024–2025 school year in three schools in the city of Sofia. A total of 100 pupils aged 8–9 were divided into two groups. One group, which includes pupils from 119 Secondary School "Acad. Mihail Arnaudov", was designated the experimental group. This group worked with a teacher specialized in physical education. The other group, designated the control group, includes pupils from 85 Secondary School "Otets Paisiy" and 109 Primary School "Hristo Smirnenski". The PE and sport lessons for this group were led by a non-specialist teacher. Both groups were tested at the end of the school year using two motor tests: "Balance" and "Dribble with the preferred hand." The obtained test results were processed using the statistical software SPSS v.25. The data were subjected to variance and comparative analysis. The results of the study show the presence of significant differences regarding the motor abilities of the two pupil groups.

Keywords: pupils, physical education, specialist teacher, non-specialist teacher.

DUAL CAREER OF ELITE ADOLESCENT ATHLETES (AGED 15–19): A COMPARATIVE ANALYSIS OF POLICIES AND PRACTICES IN EUROPE

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Abstract: The development of "Dual Careers" for athletes has emerged as a high-priority constituent of European sports policy. This framework aims to establish the necessary conditions for the effective integration of elite-level athletic pursuits with academic requirements and future professional transition. Providing robust support for adolescent athletes during this phase is critical; the developmental window of 15–19 years is a definitive period where athletic performance, educational attainment, and long-term vocational prospects are simultaneously forged. Successful dual career management necessitates systematic coordination between sports organizations, educational institutions, and diverse sectoral stakeholders. Research Objectives and Methodology The primary objective of this study is to evaluate the policies, systemic challenges, and best practices associated with the dual career progression of adolescent volleyball players across four European nations: the Republic of Bulgaria, the Republic of Serbia, Croatia, and Austria. To fulfill this objective, the research addresses the following thematic areas: • An assessment of the level of institutional awareness regarding national dual career strategies and policy frameworks. • The identification of fundamental impediments and barriers to the synchronization of athletic and academic commitments. • An analysis of the support mechanisms currently implemented by sports organizations. • An investigation into existing evidence-based best practices within the selected jurisdictions. The study's cohort comprises club presidents and managers, representatives from national volleyball federations, and professional coaches. The scope of the inquiry focuses specifically on the management practices, policy architectures, and support mechanisms tailored for the volleyball sector. Results and Discussion The findings indicate that literacy regarding national dual career policies remains fragmented. Adolescent athletes consistently report significant challenges, most notably temporal constraints for academic study, high-intensity training loads, and a lack of formalized communication channels with educational environments. From an institutional perspective, the primary barriers to effective implementation include a deficit of targeted information, a shortage of specialized personnel, and the absence of comprehensive national strategies. The analysis suggests that the optimization of dual career management is predicated on cross-sectoral partnerships between sports and educational entities, the adoption of flexible pedagogical models, and the provision of structured mentorship.

Keywords: Dual Career, Volleyball, manager



PERFORMANCE MANAGEMENT AND TEAM EFFECTIVENESS: A SYSTEMATIC REVIEW OF DETERMINANTS OF ORGANIZATIONAL PERFORMANCE

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Abstract: Abstract: Performance management has become a fundamental component of modern organizational strategy, facilitating the alignment between individual performance, team effectiveness, and overall organizational objectives. In contemporary organizational environments characterized by increasing complexity, digital transformation, and competitive pressure, organizations increasingly rely on teambased work structures to enhance productivity, innovation, and adaptability. As a result, understanding the determinants of team performance and their implications for performance management systems has become a central topic in management research. The aim of the present study was to systematically examine recent empirical research on team performance determinants and to analyze their relevance for contemporary performance management practices. A systematic literature review was conducted following the Prisma-ScR methodological framework. Relevant studies published between 2022 and 2026 were identified through searches performed in major academic databases, including Scopus, Web of Science, and Google Scholar. The search strategy included combinations of keywords related to performance management, team performance, leadership, organizational effectiveness, and teamwork. After removing duplicate records and applying predefined inclusion and exclusion criteria, a total of 20 empirical studies were selected for the final analysis. The selected studies included research conducted across multiple sectors such as business organizations, technology companies, healthcare institutions, and sport organizations. Descriptive and comparative analyses were performed to examine the frequency and impact of key determinants of team performance reported across the selected studies. In addition, correlation-based evidence reported in the reviewed studies was synthesized to identify the relative influence of different performance management variables. The results indicated that leadership quality, communication processes, performance feedback systems, and team cohesion were the most frequently reported determinants associated with improved team effectiveness and organizational outcomes. Specifically, leadership-related variables were reported in 80% of the analyzed studies, performance feedback mechanisms in 75%, communication processes in 70%, and team cohesion in 60% of the reviewed research. The findings demonstrate that organizations implementing structured leadership practices, continuous performance feedback systems, and effective communication processes tend to achieve higher levels of team productivity, collaboration, and employee engagement. Furthermore, the results highlight that performance management systems focused solely on individual evaluation may overlook important collective performance dynamics that significantly influence organizational outcomes. In conclusion, this study provides a comprehensive synthesis of recent empirical evidence on team performance determinants and highlights the importance of integrating leadership development, communication practices, and feedback mechanisms into modern performance management frameworks. These findings offer valuable implications for managers, human resource professionals, and organizational leaders seeking to design more effective performance management systems capable of improving team effectiveness and overall organizational performance.

Keywords: Key words: performance management; team performance; leadership; organizational effectiveness; teamwork

MATCH OUTCOME PREDICTION IN ELITE FOOTBALL: THE ROLE OF OFFENSIVE AND DEFENSIVE PERFORMANCE INDICATORS

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Abstract: Understanding the performance indicators associated with match success has become an important objective in modern football analytics. The aim of this study was to examine which offensive and defensive performance indicators predict match outcomes for championship teams competing in the top European football leagues during the 2023–2024 season. A total of 110 matches were analysed using data obtained from the professional match analysis platform InStat Scout. The variables examined included offensive indicators (ball possession, total and successful passes, crosses, shots, shots on target, and goals scored) and defensive indicators (ball losses and recoveries, interceptions, duels and duels won, fouls committed, shots conceded, and goals conceded). Relationships between performance indicators and match outcomes were analysed using Spearman's correlation coefficient, followed by an ordinal logistic regression model to determine their predictive value. Statistical analyses were performed using IBM SPSS version 26. Significant positive correlations were observed between goals scored and shots on target with points obtained ($\rho = 0.542$ and $\rho = 0.338$, respectively). Conversely,



goals conceded ($\rho = -0.432$), shots on target conceded ($\rho = -0.229$), and fouls committed ($\rho = -0.200$) were negatively associated with match outcomes. Ordinal logistic regression indicated that goals scored was the strongest offensive predictor of match results ($\beta = 1.160$; $p < 0.001$; OR = 3.192, 95% CI: 1.961–5.187), while goals conceded and fouls committed were significant negative predictors. Additionally, the statistical results suggest that match success in elite football is not determined solely by the quantity of offensive actions, but rather by their effectiveness and efficiency during key phases of play. In particular, the ability of teams to convert scoring opportunities into goals and to limit high-quality chances for opponents appears to be a decisive factor influencing match outcomes. This emphasizes the importance of tactical organization, decision-making in the final third of the field, and the capacity of players to execute technical actions under competitive pressure. Furthermore, the findings highlight the relevance of defensive discipline in elite football performance. Variables such as goals conceded, shots on target conceded, and fouls committed were associated with poorer match outcomes, suggesting that teams that maintain defensive compactness and avoid unnecessary fouls may increase their probability of achieving favourable results. These results are consistent with previous research in football performance analysis, which has emphasized the balance between attacking efficiency and defensive stability as a fundamental component of successful team performance. From a practical perspective, the results of this study provide valuable insights for coaches, analysts, and performance specialists working in professional football environments. By identifying the key performance indicators that most strongly influence match outcomes, teams may design more effective training strategies, optimize tactical preparation, and improve decision-making processes during matches. Consequently, integrating performance data analysis into the technical and tactical preparation of teams can contribute to enhancing competitive performance in elite football. These findings highlight the importance of offensive efficiency and defensive solidity as key determinants of competitive success in elite football.

Keywords: Key words: football performance analysis, match performance indicators, match outcome prediction, elite soccer, offensive and defensive performance, soccer analytics

SYNERGETIC APPROACHES FOR DEVELOPING EXPLOSIVE POWER IN ADOLESCENT VOLLEYBALL PLAYERS

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Abstract: Explosive power is one of the crucial physical abilities, especially in volleyball. The aim of this study is to investigate the effectiveness of the synergetic approaches in developing the explosive power of the lower extremities and examine the characteristics of motor abilities in young volleyball players. The study was conducted over several stages including anthropometric measurements, speed and agility tests, and vertical jump assessments. The number of participants was 60 female youth volleyball players (mean age 16.5 years). There was implemented 10-week strength and conditioning training in the experimental group. The training intervention focused on the strength and conditioning exercises to improve explosive power and sport-specific abilities. The results of the study showed significant improvements in several parameters. 10 m sprint test was improved with 0.2 s, 20 m sprint test was improved with 0.1 s. There were considered improvements even in vertical jump performance. The countermovement jump (CMJ) showed an improvement from 25.0 cm to 32.7 cm. Similarly, the squat jump (SJ) showed an improvement from 25.0 cm to 32.3 cm. Moreover, the drop jump (DJ) also showed considerable improvement from 29.1 cm to 37.1 cm. Agility performance also showed improvement for the experimental group. The 10x5 m agility test showed a 1.26% improvement. Moreover, the results showed a significant difference between the pre- and post-test for the experimental group variables at $p < 0.05$. These results confirmed that a structured synergistic training approach can effectively enhance the explosive power of young volleyball players and can be practically integrated into regular volleyball training programs.

Keywords: Volleyball players, agility, explosive power, synergetic approaches

TECHNOLOGY-BASED SELF-DIRECTED LEARNING MODEL FOR PHYSICAL EDUCATION: DETERMINANTS, IMPLEMENTATION AND PRACTICAL APPLICATION



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Abstract: Environments and integrates them into a model applicable to physical education and educational policy development. Although WHO reports a decline in physical education participation from early childhood, early experiences remain essential for shaping pupils' engagement in physical activity (PA). These experiences support smoother learning trajectories while preserving children's natural inclination to explore and play. The Lithuanian General Framework for Physical Education identifies physical and health education as a (pre)subject area and emphasizes the role of digital technologies in promoting PA. Therefore, a Technology-based Self-directed Learning model must ensure an enabling learning environment and incorporate essential physical education components required for self-directed learning. Implementation varies significantly across educational levels, including primary, secondary, and higher education. Methods. The study employs qualitative empirical data collection, qualitative content analysis, semi-structured interviews Results. The project introduces an innovative research direction, as self-directed learning is a relatively new yet promising educational paradigm. Its complexity stems from the multifaceted nature of the research object and the need to identify real-time challenges in integrating technology into self-directed learning to enhance learners' autonomy and competence. The project fosters dialogue among learners, physical education teachers, and technology developers to address didactic challenges. A technology-enhanced self-directed learning model will be developed to inform physical education policy-making and support optimal learning environments for pupils in grades 9–12, taking into account essential physical education factors required for self-directed learning. Conclusions. The project is expected to positively influence the understanding and application of technology-based self-directed learning, elevate the quality of physical education, and contribute significantly to the professional development of project participants. This project is implemented under the progress measure of the Education Development Programme of the Ministry of Education, Science and Sport of the Republic of Lithuania and is co-funded by the European Union (the project „Breakthrough in Educational Research“ No 10-044-P-0001)

Keywords: Self-directed Learning, Physical Education, Digital Learning Environments, Technology- enhanced Learning

ENHANCING CLASSROOM SOCIAL CLIMATE THROUGH PROJECT-BASED LEARNING WITH COOPERATIVE GAMES

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The social climate of a classroom plays an important role in students' well-being, cooperation, and engagement in the learning process. Teaching approaches that emphasize collaboration and active participation are assumed to contribute to the development of supportive peer relationships. One such approach is project-based learning (PBL), which integrates problem-solving, cooperation, and shared responsibility for learning outcomes. The aim of this study was to examine the influence of a project-based learning unit focused on cooperative games on the social climate of a classroom. A quasi-experimental pre-test–post-test research design was employed. The sample consisted of 45 students from two sixth-grade classes. One class participated in a project-based learning unit based on cooperative games (PBL group, $n = 22$), while the second class followed the standard national curriculum without intervention (control group, $n = 23$). Classroom climate was measured using the KLIT questionnaire, which assesses supportive classroom climate, motivation for negative school performance, and self-assertion. Internal consistency of the scales was verified using Cronbach's alpha. Data were analysed using descriptive statistics and analysis of covariance (ANCOVA), with pre-test scores included as covariates. The results revealed a statistically significant effect of the study programme on supportive classroom climate after



controlling for initial differences, $F(1, 42) = 26.34, p < .001$, with a large effect size (partial $\eta^2 = .385$). Students in the PBL group demonstrated higher adjusted post-test scores for supportive classroom climate compared with the control group. Significant programme effects were also observed for motivation for negative school performance, $F(1, 42) = 8.76, p = .005$, partial $\eta^2 = .173$, and self-assertion, $F(1, 42) = 6.75, p = .013$, partial $\eta^2 = .139$; however, the self-assertion scale demonstrated low internal consistency in the present sample, therefore these results should be interpreted with caution. Overall, the findings suggest that project-based learning activities incorporating cooperative games can contribute to the development of a more supportive classroom social climate by encouraging collaboration, peer support, and shared responsibility for learning. At the same time, the results indicate that introducing cooperative project-based activities may influence students' motivational perceptions in more complex ways, highlighting the importance of further research examining the broader motivational effects of collaborative learning approaches. This study was supported by the Slovak Scientific Grant Agency (VEGA) under grant number 1/0748/26, titled “*Project-Based Learning in Physical and Sport Education and Its Impact on the Motor, Cognitive, and Affective Development of Pupils in Primary and Lower Secondary Education*”.

Keywords: project-based learning, classroom climate, cooperative learning, classroom social climate, primary education

EFFECTS OF RHODIOLA ROSEA SUPPLEMENTATION ON EXERCISE PERFORMANCE AND RECOVERY-RELATED OUTCOMES IN ATHLETES AND PHYSICALLY ACTIVE ADULTS: A SYSTEMATIC REVIEW OF RANDOMIZED CONTROLLED TRIALS

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Abstract: Background: Rhodiola rosea (RR) is an adaptogenic herbal supplement that has gained increasing attention in sports nutrition due to its proposed ergogenic, anti-fatigue, and recovery-enhancing properties. Bioactive compounds such as rosavins and salidroside are believed to influence mitochondrial efficiency, antioxidant defense, and neuroendocrine responses, which may support exercise performance and recovery. Despite these proposed mechanisms, findings from human trials remain inconsistent, and the overall effectiveness of RR supplementation for athletes is still unclear. Therefore, a rigorous synthesis of randomized controlled trials (RCTs) is needed to better understand its potential role in sports performance. Purpose: This systematic review aimed to evaluate the effects of acute and chronic Rhodiola rosea supplementation on exercise performance and recovery-related outcomes in athletes and physically active adults. Methods: This systematic review was conducted in accordance with the PRISMA guidelines. Electronic database searches were performed in PubMed, Web of Science, Scopus, EBSCO, ScienceDirect, and Google Scholar for studies published between September 2015 and September 2025. Eligible studies were randomized controlled trials conducted in healthy adults (≥ 18 years) that compared RR supplementation with a placebo or control condition and reported outcomes related to physical performance or recovery. Two reviewers independently screened studies, extracted relevant data, and assessed methodological quality using the Cochrane Risk of Bias 2 tool. Results: Six RCTs met the inclusion criteria and were included in the qualitative synthesis. The included studies showed considerable heterogeneity in supplementation protocols, participant characteristics, exercise modalities, and outcome measures. Overall, RR supplementation did not consistently improve endurance-related outcomes such as $VO_2\max$ or time to exhaustion. However, several studies reported modest improvements in specific performance domains, including anaerobic power output, movement velocity during resistance exercise, and psychomotor performance. In addition, RR supplementation was associated with enhanced antioxidant capacity and reduced creatine kinase responses during the recovery phase in some trials. Effects on inflammatory markers were generally minimal. These findings suggest that the ergogenic effects of RR may be context-dependent and more evident during high-intensity or anaerobic exercise rather than endurance-based activities. Conclusions: Current evidence from randomized controlled trials indicates that Rhodiola rosea supplementation may provide small and context-specific benefits for anaerobic performance and recovery-related outcomes but does not consistently enhance endurance performance. Further well-designed studies with larger sample sizes, standardized supplementation protocols, and clearly defined outcome measures are required to clarify the efficacy and practical applications of RR supplementation in athletic populations.



Keywords: athletic performance, ergogenic aids, randomized controlled trials, recovery, rhodiola rosea, systematic review

ANALYSIS OF STUDENTS' PHYSICAL ACTIVITY LEVELS AS A BASIS FOR IMPLEMENTING PROJECT-BASED LEARNING IN PHYSICAL EDUCATION

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Abstract: Introduction: The global decline in physical activity (PA) levels among adolescents has emerged as a significant public health challenge, with evidence suggesting that a vast majority of youth fail to satisfy international movement recommendations. Physical Education (PE) is recognized as a pivotal platform for achieving health-related activity thresholds; however, current literature indicates that at least 50% of PE lesson time must be dedicated to moderate-to-vigorous physical activity (MVPA) to ensure optimal health outcomes. In light of the identified deficiencies in traditional, teacher-centered instruction, this study establishes a diagnostic baseline to evaluate the necessity of transitioning toward Project-Based Learning (PBL). As a student-centered pedagogical model, PBL integrates motor, cognitive, and affective domains through inquiry-based tasks, potentially addressing the motivational and engagement gaps observed in conventional PE. Methods: The research sample comprised 355 adolescents (aged 11–18 years) recruited from an eight-year gymnasium (secondary grammar school). Physical load was objectively quantified using Garmin Forerunner 55 wearable devices, with MVPA operationalized as activity where the heart rate exceeded 125 beats per minute. Data were collected across 30 PE lessons. Statistical analysis focused on disparities across gender and teaching environments (comparing indoor gymnasiums and outdoor multifunctional fields) using the Mann-Whitney U test, with effect sizes calculated via Cohen's *d*. Results: The findings revealed that the mean MVPA level across all monitored lessons was 28.00%, significantly below the 50% recommendation. A substantial gender disparity was identified; males achieved a mean MVPA of 30.25%, whereas females attained only 15.98% ($p \leq 0.01$, $d = 0.65$). Furthermore, environmental analysis indicated that outdoor settings facilitated higher intensity (30.55%) compared to indoor gymnasiums (26.02%). This difference was found to be statistically significant ($p \leq 0.05$), although the effect size indicated a small effect ($d=0.19$). Discussion: The results indicate that traditional PE models currently fall short of providing sufficient physical load, with female students and indoor environments being disproportionately affected. This significant gap provides a robust empirical foundation for implementing PBL within the PE curriculum. By shifting from teacher-directed instruction to student-centered inquiry, PBL offers a potential framework to enhance intrinsic motivation and autonomy, aiming to increase active engagement and bridge the intensity gaps identified in this study. This study was supported by the Slovak Scientific Grant Agency (VEGA) under grant number 1/0748/26, titled "Project-Based Learning in Physical and Sport Education and Its Impact on the Motor, Cognitive, and Affective Development of Pupils in Primary and Lower Secondary Education".

Keywords: MVPA, physical education, gender differences, project-based learning.

INNOVATING PHYSICAL ACTIVITY INTEGRATION ACROSS SCHOOL SUBJECTS AS NEW EDUCATIONAL CHANCE

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Abstract: Ivo Pilar Institute of Social Sciences in Zagreb, Croatia, a leading research institution renowned for its interdisciplinary expertise in social sciences, educational policy analysis, and community engagement and the Faculty of Kinesiology of the University of Zagreb, a leading higher education institution in the field of kinesiology Croatia and in the region are currently conducting 2 research project (WDSQUALITY and EDUFIT-HR) with clear objectives to change educational paradigm regarding to place and role of physical education and especially physical activity in a school organisation and pedagogical practice. The paper will present central elements of the both research projects and present how both project are intended to responds to a pressing dual challenge - the alarming decline in physical activity (PA) among students aged 6–16 and the persistent lag in



academic performance, particularly in math and reading literacy, as evidenced by PISA scores. Integration of PA into teaching across five critical school areas—math, science literacy, reading literacy, arts, and psycho-social well-being – is one of very efficient and sustainable way in enhancing not only physical health but also academic outcomes, student engagement, creativity, and mental resilience.

Keywords: hysical activity (PA), primary school, school achievement, WDSQUALITY, EDUFIT-HR

PROJECT STEP2HEALTH: GAIT ANALYSIS AS A HEALTH INDICATOR IN SCHOOL-AGED CHILDREN

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Abstract: Introduction: Reduced physical activity, increased sedentary behaviour, and prolonged screen exposure are increasingly affecting children’s motor development and overall health. Walking, as a fundamental locomotor pattern, reflects the functional status of the musculoskeletal system and may serve as an early indicator of health-related problems. The Step2Health project was developed to examine how contemporary lifestyle factors, including insufficient physical activity and external loading such as schoolbag carriage, influence gait biomechanics in school-aged children. The project also aims to support early identification of potentially unfavourable locomotor patterns and to provide an evidence base for targeted feedback in school-based health promotion and prevention initiatives. Methods: The project includes primary school children aged 6–14 years, stratified by age, sex, and physical activity level. Data collection combines anthropometric assessment, selected physical fitness testing, parent-reported lifestyle data, and biomechanical gait analysis. Lifestyle-related variables include habitual physical activity, sedentary behaviour, sleep quality, and schoolbag characteristics and carrying habits. Gait is assessed using pedobarographic plantar pressure analysis on the Zebris FDM platform during standardized walking trials, with comparison of static and dynamic foot-loading parameters. The project also includes the development of a digital database of normative gait values and the identification of deviations potentially associated with locomotor dysfunction. Results: The project is designed to identify gait characteristics associated with lower habitual physical activity, greater sedentary exposure, and less favourable external loading conditions. Particular attention is directed toward altered plantar pressure distribution, gait symmetry, and selected temporal-spatial gait indicators that may indicate altered locomotor function. In addition, the project aims to generate preliminary normative values for gait patterns in Croatian primary school children and to identify subgroups at increased risk of locomotor overload or functional deviations, thereby enabling more precise screening and interpretation of gait-related findings. Discussion/Conclusions: Project Step2Health integrates biomechanics, school-based health promotion, and community-oriented prevention by translating gait assessment into practical guidance for teachers, parents, and health professionals. Beyond identifying potential locomotor problems, the project may support early preventive strategies, individualized monitoring, and the development of recommendations for healthier movement habits and more appropriate schoolbag use. In this way, the project contributes to a broader understanding of how movement monitoring can be incorporated into school and public health initiatives aimed at improving child health and well-being.

Keywords: gait analysis, school-aged children, health promotion, physical activity, schoolbag load

EFFECTS OF MENTHOL ON METABOLIC, CARDIOVASCULAR, THERMAL AND APPETITE VARIABLES IN HUMANS. ANALYSIS BY BODY MASS INDEX, GENDER AND DOSE.

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Abstract: Introduction: Activation of transient receptor potential melastatin 8 (TRPM8) channels, a subset of cold sensors located in skin, can upregulate brown adipose tissue metabolism and enhance energy expenditure. Menthol, a TRPM8 agonist, may enhance thermogenesis while affecting appetite, thermal perception and systemic blood pressure. Yet, human studies, as well as the evaluation of mediating roles of body mass (BMI), sex and dose are novel areas with limited information. The purpose of the study was to investigate the effects of menthol application on skin on resting energy expenditure (REE), thermal perception, appetite, blood pressure and the mediating effects of BMI, gender and dose. Methods: Ten normal weight (5 women) and ten individuals with class I obesity (5 women) participated in the study which consisted of four treatment sessions on four consecutive days. In each day, subjects’ skin was initially smeared with a control solution (water) once and after 20 minutes



with a menthol solution (2.3%), with data being sampled for 40 additional minutes. On the third and fourth experimental day, half of the participants received double menthol dose (4.6 gr) to investigate possible dose response effect. Results: Menthol increased REE, perceived coolness and to a smaller extent appetite and blood pressure (all $p < 0.001$). Compared with normal weight individuals, obese participants presented decreased metabolic responses, while female individuals, compared with male individuals boasted greater REE increases. Appetite was only increased in males, with females demonstrating significantly higher coolness sensations. A dose response effect was observed for all metabolic variables, as well as the perceived coolness sensation ($p < 0.001$). Discussion: Menthol applied on the skin significantly increased REE, altered thermal perception, and to a lesser extent it increased the appetite and blood pressure. BMI and sex differentiated the response, while a dose response effect was observed for all metabolic and thermal perception responses.

Keywords: L-menthol, resting energy expenditure, thermal sensation, gender, BMI.

ANTHROPOMETRIC MEASUREMENTS AND PHYSICAL FITNESS TESTING IN EUROPEAN SCHOOL SYSTEMS: PRELIMINARY INSIGHTS FOR THE DEVELOPMENT OF THE CROATIAN EDUFIT-HR MODEL

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Abstract: Introduction: Monitoring anthropometric characteristics and physical fitness in children and adolescents is important for the early identification of health risks and for the development of evidence-based educational and public health policies. However, European practice remains heterogeneous, with differences in testing protocols, institutional support, and integration into school and health systems. Methods: This preliminary study aims to provide an overview of the literature, policies, curricula, and protocols related to anthropometric measurements and physical fitness testing in school settings, with a focus on nine European countries included in the EDUFIT-HR project: Slovenia, Germany, Austria, Denmark, Finland, Portugal, the Netherlands, Italy, and Greece. The review will be conducted through PubMed, Scopus, and CROSB, complemented by the analysis of official documents and national reports, as well as structured interviews with relevant stakeholders and experts. Results: Preliminary findings indicate that Slovenia, Finland, Portugal, and Germany represent the most structured models. In Slovenia, SLOfit enables annual school-based monitoring and longitudinal tracking of children's physical and motor development. In Finland, Move! is linked to school health check-ups for 5th and 8th grade pupils. In Portugal, FITescola supports school-based monitoring of fitness, physical activity, and sedentary behaviour. In Germany, the MoMo framework provides nationwide monitoring of physical activity, motor performance, and health in children and adolescents. In the remaining countries, approaches appear more fragmented or policy-oriented. In Austria, AUT FIT has been proposed as a feasible primary school monitoring tool. In Denmark, policy emphasizes 45 minutes of daily physical activity in schools. In the Netherlands, physical activity is monitored, but no unified national school-based testing system was clearly identified. In Italy, OKkio alla SALUTE focuses on overweight, obesity, and related behavioural risk factors, while in Greece, EYZHN represents an important school-based health-promotion initiative. Conclusion: These preliminary insights may support the development of a Croatian model combining standardized testing, institutional support, and educational and public health perspectives.

Keywords: anthropometric measurements; physical fitness testing; school children; surveillance systems; school health; Europe; EDUFIT-HR

CYCLING SKILLS AND COGNITIVE-MOTOR DEVELOPMENT IN YOUTH: IMPLICATIONS FOR LIFELONG PHYSICAL ACTIVITY

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Abstract: Physical activity during childhood and adolescence is crucial for physical, cognitive, and psychosocial development. Cycling, both as a recreational activity and as a mode of transport, contributes substantially to daily



physical activity and the adoption of lifelong healthy behaviors. Nevertheless, children's participation in cycling is declining, particularly in urban environments where safe cycling requires advanced cycling, cognitive, and motor skills. The relationship between cycling and cognitivemotor abilities under complex urban conditions remains insufficiently explored. The present review aims to identify and synthesize evidence on the relationship between cycling and children's motor and cognitive skills, and its contribution to daily physical activity and transportation. A literature search was conducted between January and February 2026 in PubMed, Web of Science, ScienceDirect, Scopus, EBSCO, TRID, and Google Scholar. The search string (English-language only) was: (child* OR youth* OR adolescent*) AND (bike* OR cycle* OR bicycle* OR cycling*) AND (skills* OR abilities* OR competence*) AND (learn* OR ride*) AND (cognitive* OR motor*) AND (FMS* OR "fundamental movement skills") AND motor AND ("physical activity" OR transportation OR commuting). Studies were included if they involved children or adolescents, examined cycling skills, assessed cognitive and/or motor parameters, were original full-text articles, and were published in peer-reviewed English-language journals. Twenty articles met the inclusion criteria. The reviewed studies indicate that cycling is positively associated with improvements in cycling skills, motor competence, balance, coordination, and selected cognitive functions in children. Evidence also suggests that higher levels of cognitive-motor skills are linked to safer and more effective cycling performance, particularly in complex traffic environments. However, methodological heterogeneity and the limited number of targeted studies restrict firm conclusions. Cycling appears to play an important role in the development of children's motor and cognitive competencies, as well as supporting active lifestyles. Nevertheless, further systematic and high-quality research is needed to clarify the strength and direction of these relationships, particularly within demanding urban contexts and across different levels of children's and adolescents' abilities. This approach will inform the development of effective strategies to increase cycling as a means of active transportation, leading to lifelong physical activity.

Keywords: Cycling skills, Youth physical activity, Motor competence, Balance and coordination, Urban cycling safety, Child cycling competence, Lifelong active lifestyles, Active transportation, Urban mobility

DESIGN AND IMPLEMENTATION OF A PROGRAMMABLE, WIRELESS, AND MULTI-COLOR PANEL ANTICIPATION TIMING MEASUREMENT SYSTEM FOR TALENT IDENTIFICATION

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Abstract: Introduction: Success in sports depends not only on physical abilities but also on perceptual-motor skills such as anticipation timing. Anticipation timing, defined as the ability to predict when a moving object will reach a specific point, is critical in many sports, particularly those involving object tracking and rapid decision-making. Previous research has shown that elite athletes demonstrate superior anticipation abilities compared to less experienced individuals. Although devices such as the Bassin Anticipation Timer are widely used, they have limitations, including restricted measurement options and single-plane assessment. Therefore, developing more advanced and flexible systems is essential for both research and talent identification. Methods: Within the scope of a TUBITAK (124E463)-supported project, a novel anticipation timing measurement system was designed. The system consists of programmable, wireless, multi-color LED panels with a total length of approximately 2.4 meters. Athletes stand approximately 2 meters away from the system and are required to predict when a moving light stimulus, simulating a ball trajectory, reaches a target point and respond by pressing a handheld wireless button. The system allows for adjustable speed, color, and stimulus configurations, providing a more ecologically valid and flexible testing environment compared to traditional devices. Results: Preliminary testing of the system indicates that it can reliably measure anticipation timing with high sensitivity to different stimulus conditions. The programmable structure enables the simulation of sport-specific scenarios, and the wireless design improves usability in field settings. Compared to traditional systems, the device offers enhanced flexibility, multi-dimensional stimulus presentation, and improved applicability across different sports. Discussion: The developed system provides a novel approach to measuring perceptual-motor abilities, particularly anticipation timing, which plays a crucial role in athletic performance. Its flexibility and adaptability make it suitable for talent identification, athlete monitoring, and training applications. The findings suggest that integrating such advanced technologies may improve the accuracy of performance assessment and contribute to more effective talent selection processes.



Future studies will focus on validating the system with elite athletes and comparing results across different sports disciplines.

Keywords: anticipation timing, talent identification, sports technology, motor abilities

PSYCHOLOGICAL PERFORMANCE DYNAMICS IN WRESTLERS: A REVIEW ON THE INTERACTION BETWEEN MENTAL IMAGERY, SELF-CONFIDENCE, AND ATHLETIC PERFORMANCE

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Abstract: The aim of this study is to examine the relationship between mental imagery, self-confidence, and athletic performance in wrestlers within the framework of current literature and to provide a comprehensive conceptual evaluation of their interaction. Wrestling is a physically demanding and psychologically intensive sport that requires rapid decision-making, emotional control, and sustained focus under pressure. Therefore, athletes' performance is not only determined by physiological factors but also by cognitive and psychological processes. Mental imagery is widely recognized as an effective psychological skill that enables athletes to mentally simulate movements and performance scenarios. Recent studies have shown that imagery contributes to motor skill development, performance preparation, and emotional regulation. In addition, self-confidence is considered a key psychological factor influencing performance consistency and success, particularly in individual sports. Athletes with higher levels of self-confidence tend to demonstrate better focus, reduced anxiety, and more stable performance outcomes. The literature indicates a positive relationship between mental imagery and self-confidence, suggesting that imagery enhances athletes' belief in their abilities by allowing them to mentally rehearse successful performance scenarios. However, most existing studies have examined these variables separately or through bivariate relationships, while comprehensive approaches addressing their combined interaction remain limited. This review focuses specifically on wrestling, highlighting the unique psychological demands of the sport and the role of mental imagery in performance preparation. It is suggested that mental imagery, self-confidence, and athletic performance form a dynamic and interrelated system in which each component influences and reinforces the others. In conclusion, integrating mental imagery into training programs may enhance self-confidence and contribute to improved athletic performance in wrestlers. Future research should adopt more holistic models and experimental designs to better understand the complex relationships among these variables.

Keywords: mental imagery, self-confidence, athletic performance, wrestling, sport psychology

EFFECT OF PHYSICAL EDUCATION AND MULTIDISCIPLINARY SCHOOL-BASED INTERVENTIONS ON CHILDREN'S LIFESTYLE, COGNITION, STRESS, AND ACADEMIC SUCCESS

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Abstract: Introduction: Regular participation in physical activity can promote children's health, since it exerts beneficial effects on metabolic, musculoskeletal and cardiovascular variables as well as on psychological and cognitive variables. School provides opportunities to be physically active during physical education offering a valid possibility to children to train in an appropriate manner, since all children can be reached. Limited research has examined the combined effects of physical education (PE), lifestyle habits, and multidisciplinary school-based interventions on children's cognitive, physiological, and academic outcomes, particularly considering circadian influences and long-term sustainability. This set of studies aimed to: (i) compare the effects of different PE lesson types (curricular vs. cognitively demanding) and their timing on cortisol levels and attention capacity; (ii) investigate the relationship between healthy lifestyle habits, motor abilities, and academic achievement; and (iii) evaluate both the short- and long-term effectiveness of traditional, coordinative, and combined PE and nutritional interventions on children's lifestyles and performance. Methods: Across the studies, a total of over 400 primary school children (aged 8–11 years) participated in randomized interventions. Acute effects were assessed through salivary cortisol and attentional performance before and after PE lessons of equal intensity and duration. Longitudinal outcomes included academic achievement (Italian language and mathematics skills), anthropometric measures, physical fitness, motor coordination, physical activity levels, sedentary behavior, and dietary habits, measured before, after, and up to one year following interventions. Results: Both curricular and cognitively



demanding PE lessons improved attention and reduced cortisol levels, with curricular PE showing greater benefits in attentional performance. Lesson timing significantly influenced both cognitive outcomes and cortisol responses, although improvements in attention were not directly associated with cortisol changes. Lifestyle factors, including physical activity level, aerobic fitness, muscular strength, and gross motor coordination, moderately predicted academic achievement. Unexpectedly, traditional PE interventions led to greater improvements in academic performance compared to coordinative PE. Furthermore, multidisciplinary interventions combining PE and nutritional education produced sustained improvements in physical activity levels and dietary habits, with effects persisting up to one year post-intervention. Coordinative PE demonstrated additional benefits in maintaining healthier body composition over time, despite less pronounced academic gains. Discussion: In conclusion, PE and lifestyle interventions in school settings play a significant role in enhancing children's cognitive function, academic achievement, and healthy behaviors. While traditional PE appears more effective for academic outcomes, coordinative and combined interventions may offer important advantages for long-term health, highlighting the need for integrated approaches in educational practice.

Keywords: physical education, academic achievement, attention capacity, lifestyle habits, school-based interventions

MUSCULAR FITNESS IN ADOLESCENTS. A COMPARISON BETWEEN ITALIAN AND ROMANIAN STUDENTS FOR HEALTH PROMOTION. A PRELIMINARY STUDY

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Abstract: Muscular fitness during adolescence is a fundamental component of physical fitness development and a significant determinant of lifelong health. Evidence shows that adequate muscular strength is associated with more favorable metabolic profiles and reduced cardiometabolic risk in adulthood. Examining muscular efficiency across educational contexts may clarify how sociocultural and organizational features of physical education influence motor development. Within a socio-ecological framework, this preliminary study compares muscular efficiency in Italian and Romanian students, focusing on gender differences, relationships among strength tests, and percentile distributions of performance. This study adopted an exploratory cross-sectional design. The sample included 447 lower secondary school students (mean age = 12.51 ± 0.98 years). Strength was assessed using standardized and validated tests: Standing Long Jump (SLJ) (explosive lower-limb strength), Handgrip (isometric upper-limb strength), and Sit-ups (abdominal muscular endurance). Between-country and gender comparisons were conducted, along with correlation analyses among tests and evaluation of percentile distributions (P25–P75) to describe group performance profiles. Among males, the Romanian group achieved higher mean scores in the SLJ (1.74 ± 0.23 vs. 1.50 ± 0.31 m) and sit-ups (23.76 ± 4.00 vs. 16.73 ± 5.03 rep), while Handgrip values were comparable (29.24 ± 8.94 vs. 27.63 ± 8.17 Kg). Similarly, Romanian females performed better in the SLJ (1.49 ± 0.24 vs. 1.30 ± 0.24 m) and sit-ups (20.01 ± 3.30 vs. 14.42 ± 4.57 rep), with minimal differences in Handgrip (24.92 ± 5.16 vs. 24.33 ± 4.33 Kg). Significant correlations between SLJ and sit-ups emerged in both countries and sexes (males: Italy $r = 0.63$, Romania $r = 0.32$; females: Italy $r = 0.35$, Romania $r = 0.32$), indicating coherence between dynamic and endurance strength. Associations involving Handgrip were weak or absent. Percentile analysis confirmed a Romanian advantage across the interquartile range for SLJ and Sit-ups, whereas Handgrip distributions were more similar, especially among females. Romanian students showed higher dynamic and endurance strength, while upper-limb strength appeared less context-sensitive. The consistent association between SLJ and sit-ups suggests neuromuscular integration of explosive and endurance components at this age. Adolescent muscular strength is a recognized indicator of present and future health, linked to cardiometabolic benefits, improved weight control, and reduced premature mortality. Observed differences may reflect environmental, cultural, and methodological–pedagogical influences within the two educational systems. Larger samples are needed to consolidate percentile references and further investigate contextual determinants to inform school-based interventions aimed at enhancing muscular efficiency and promoting adolescent health.

Keywords: Physical Education, Muscular fitness, Muscular strength, Strength development, Adolescents



CARDIORESPIRATORY EFFICIENCY AND AGILITY IN ADOLESCENTS: A COMPARISON BETWEEN ITALIAN AND ROMANIAN STUDENTS FOR HEALTH PROMOTION. PRELIMINARY STUDY.

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Abstract: Introduction: Motor performance in preadolescence is a key indicator of health status and lifelong active lifestyle development. Cardiorespiratory fitness and motor coordination are linked to physical activity levels, psychosocial well-being, and prevention of future cardiovascular risk. This preliminary study compares endurance and agility in students from Italy and Romania, analyzing gender differences, correlations between motor tests, and percentile distributions of performance. Within a socio-ecological framework, the international comparison examines how sociocultural models and organizational features of school physical education may shape motor development during adolescence. Methods: A preliminary cross-sectional design was used. The sample comprised 168 Italian and Romanian lower secondary school students (mean age = 12.57 ± 0.86 years). Cardiorespiratory endurance was assessed with the 6-Minute Walking Test (6MWT), and agility with the 10×5 m Shuttle Run. Analyses included between-country comparisons, gender differences, correlations between tests, and percentile distributions (P25–P75). Results: Romanian students performed significantly better in the 10×5 m Shuttle Run in both sexes (males: 16.04 ± 1.38 vs. 21.87 ± 3.00 s; females: 18.25 ± 1.98 vs. 22.68 ± 2.68 s). In the 6MWT, Romanian males showed higher mean values (723.89 ± 155.32 vs. 691.50 ± 78.81 m), whereas Italian females performed better (660.46 ± 60.48 vs. 616.03 ± 93.08 m), with greater variability in the Romanian sample. A significant inverse correlation between tests emerged in the Italian cohort (males $r = -0.76$; females $r = -0.59$; $p .01$), but not in the Romanian sample. Percentile analysis confirmed Romanian superiority in the 10×5 m Shuttle Run across the distribution, while 6MWT differences were gender-dependent. Discussion: The findings suggest partially divergent motor development trajectories, with stronger integration between endurance and agility among Italian students. As cardiorespiratory fitness in youth is a major predictor of future cardiovascular, metabolic, and cognitive health, systematic school-based motor assessment is essential. From a bioecological perspective, differences may reflect sociocultural, environmental, and methodological–pedagogical influences. Larger samples and deeper analysis of these factors are needed to guide evidence-based interventions aimed at improving cardiorespiratory efficiency and promoting adolescent health.

Keywords: cardiorespiratory fitness, adolescent motor performance, health promotion, school physical education

USING MICRO:BIT AND ARTIFICIAL INTELLIGENCE TOOLS IN TEACHING PROMOTES FUTURE-ORIENTED LEARNING, STUDENT CRITICAL THINKING, AND REAL-LIFE PROBLEM SOLVING

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Abstract: Society around the world is facing many changes in all areas of life, including education. The main change in the field of education is related to learning, which is defined as an active mental process that occurs when the teacher chooses the appropriate method or style of learning based on the needs of the students, rather than simply transferring information and asking its memorization by students. In recent decades, technology has become the basic cell of life activity. Every aspect of life is closely related to technology. This requires individuals to be equipped with concrete skills in the field of technology, in order for the individual's step and social changes to be at the same level. For this reason, there is a need to develop different projects, in order for the teacher-student binomial to be coherent during the acquisition of knowledge on technology, as well as their application in practice. We think that the solution of this problem takes on its importance in these times, when the developing society is open to the creation of what today is defined by the term "global village" and where better than in the school banks can be laid the foundations for form citizens ready for the challenges of technology. Given that the "Jeronim de Rada" school has human resources capable of engaging in projects that foresee the use of micro:bit, or artificial intelligence tools, why not be among the schools that turn the use of digitalization in teaching into a work culture in the teaching and learning process. According to constructivist theories, the learner constructs his knowledge through social interaction with others and the environment, as well as building on previous knowledge and experience. For this reason, educational institutions have begun to look for better teaching methods that aim to create active and critical students. One of the ways that teachers can achieve this goal is to combine classroom teaching with digital learning inside and outside the classroom. This paper aims to document and show from the school director's side how CTPS (critical thinking and problem solving) and micro:bit influence the development



of attitudes, skills and scientific knowledge necessary to investigate and solve problems, to make decisions and to learn throughout life. This paper aims to show that by giving students the opportunity to carry out practical activities independently, they experience the pleasure of scientific discovery and satisfy their curiosity about the world, but also solve problems that our schools are currently facing such as .eg: creating or providing the material base for demonstrating experiments, providing didactic or artificial intelligence tools not only for practical demonstration of learning situations during lessons, but also for solving real problems in the family, in life and everywhere. The fulfillment of this goal requires a commitment of the school principal in the planning and coordination of the work that the school must carry out for the inclusion and cooperation of all actors who interact in the school such as teachers, students, parents, specialists of ZVA, DRAP, local government, NGOs, etc. To carry out this study, we will use quantitative data collected from questionnaires (with teachers, students, parents), statistics collected from the observation of lessons, qualitative data from questionnaires and from focus groups with students and teachers. The interpretation and analysis of these data will show us how necessary is the creation of didactic tools or artificial intelligence tools and the use of practical work in all subjects, which affect quality teaching and learning. The professional development of the staff is another added reason why it makes the goal of this project real and necessary. Teachers are given the opportunity to have a new window of information about new techniques and methods in teaching in order to improve the quality of education.

Keywords: CTPS (critical thinking and problem solving) micro:bit Coding or programming didactic tools or AI tools professional development

RELATIONSHIPS BETWEEN AEROBIC CAPACITY AND EXPLOSIVE POWER WITH SPEED AND AGILITY IN ADOLESCENT FEMALE FOOTBALL PLAYERS

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Abstract: This study aimed to examine the relationships between aerobic capacity and lower-body explosive power with speed and agility performance in adolescent female football players in Albania. A total of 41 players (mean age: 15.3 years) participated in the study. Aerobic capacity was assessed using the 20 m Shuttle Run test (Total Laps). Explosive power was evaluated through the Standing Long Jump (horizontal power) and Countermovement Jump (CMJ) (vertical power). Speed performance was measured using 20 m and 50 m sprint tests, while agility was assessed through the 10×5 m shuttle test and the T-test. Pearson correlation analysis was applied to determine the relationships between variables. The results showed that aerobic capacity had weak and non-significant correlations with speed and agility performance ($r = -0.264$ to 0.197 , $p > 0.05$). Similarly, CMJ performance was not significantly associated with sprint or agility outcomes ($r = -0.288$ to 0.233 , $p > 0.05$). A moderate and statistically significant negative correlation was found between Standing Long Jump and 50 m sprint performance ($r = -0.432$, $p = 0.005$), indicating that greater horizontal explosive power is associated with better sprint performance (lower sprint time). No other significant relationships were observed. In conclusion, aerobic capacity does not appear to be a strong determinant of speed and agility in adolescent female football players. Explosive power, particularly horizontal power, plays a more important role in sprint performance. These findings highlight the importance of incorporating strength and power training in youth football development programs.

Keywords: female, youth, football, speed, agility.

TEACHERS' NEEDS IN INTEGRATING PHYSICAL EDUCATION FOR CHILDREN WITH SPECIAL NEEDS: ENHANCING ENGAGEMENT, MOTIVATION, AND INCLUSION

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Abstract: Introduction: Inclusive education has become a central priority in modern educational systems, emphasizing equal opportunities and active participation for all learners, including those with special needs. Physical education plays a crucial role in fostering social inclusion, motivation, and well-being. However, teachers often face challenges in aligning physical education activities with individualized educational goals. This study aims to explore the needs of teachers working with children with special needs, focusing on how physical education can be effectively integrated to enhance student engagement, motivation, and inclusion in educational institutions. Methods: The study adopts a qualitative research design based on 19 semi-structured interviews conducted with assistant teachers and candidates undergoing professional training for this role. Data were analyzed through thematic analysis, enabling the identification of recurring patterns related to teachers' perceptions, challenges, and professional needs. The findings were interpreted in light of contemporary international and Albanian theoretical frameworks on inclusive education and adapted physical activity. Results: The findings reveal that teachers express a strong need for practical training, interdisciplinary collaboration, and



structured guidelines to integrate physical education into individualized learning plans. Participants highlighted that physical activities significantly improve students' social interaction, motivation, and participation. However, limited institutional support and lack of specialized resources remain key barriers. The study also identifies a gap between theoretical preparation and practical implementation in inclusive classrooms. Discussion: The results underline the importance of equipping teachers with targeted competencies in adapted physical education to support inclusive practices. Integrating physical education with broader educational objectives can enhance students' engagement and promote social cohesion. The study provides recommendations for teacher training programs, policy development, and institutional support mechanisms to strengthen inclusive education practices. **Keywords:** Keywords: inclusive education, adapted physical activity, teacher training, student engagement, social inclusion

IMPLEMENTATION OF THE UDL (UNIVERSAL DESIGN FOR LEARNING) APPROACH IN TEACHING: TOWARDS INCLUSIVE AND EFFECTIVE EDUCATION

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Abstract: Introduction: In the context of contemporary education, the diversity of students in the classroom presents ongoing challenges for teachers. This diversity encompasses differences in abilities, learning styles, interests, and socio-cultural backgrounds, all of which require flexible and differentiated approaches. The Universal Design for Learning (UDL) framework offers a pedagogical model aimed at creating inclusive learning environments by reducing barriers to learning and increasing access for all students. It is grounded in the principle that every learner can succeed when provided with appropriate and responsive learning opportunities. This study aims to examine the importance and effectiveness of implementing UDL in the teaching process, considering it as a viable alternative to traditional instructional practices. Methods: The study is based on a qualitative approach, combining a review of contemporary literature with direct classroom observations and reflective teaching practices. In particular, specific instructional situations in which differentiated strategies were applied have been analyzed. The study explores ways of integrating the three core principles of UDL: multiple means of representation, student engagement, and diverse forms of expression and assessment. The data were analyzed through a comparative lens, contrasting traditional teaching practices with those grounded in UDL, in order to identify their respective advantages and limitations. Results: The findings indicate that the implementation of UDL principles has a positive impact on students' active participation in the learning process. Students demonstrate increased motivation, improved comprehension of content, and greater autonomy in learning. Furthermore, a reduction in learning barriers was observed among students with diverse learning styles and special educational needs, thereby enhancing opportunities for equitable success. The results also highlight a more inclusive and supportive classroom environment. Discussion: The findings suggest that UDL represents an effective approach to fostering inclusive and high-quality education. However, its implementation requires professional preparation of teachers, a shift in pedagogical mindset, and sustained institutional support. The integration of UDL into everyday teaching practice contributes not only to equity in education but also to the development of 21st-century competencies such as critical thinking, collaboration, and creativity. In this regard, it is recommended that educational policies and teacher training programs more extensively incorporate this approach and promote its systematic application.

Keywords: UDL, inclusion, contemporary education, teaching, diversity

EUROPEANIZATION OF PHYSICAL EDUCATION TEACHER EDUCATION IN ALBANIA: POLICY REFORM, TEACHER AGENCY, AND PEDAGOGICAL PRACTICE

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Abstract: Introduction: The prospect of Albania's European Union (EU) integration process has significantly influenced reforms in the education system, including Physical Education Teacher Education (PETE). The process of Europeanization of education systems has become a central focus for countries aspiring to join the European Union (EU), influencing policy frameworks, institutional structures, and professional practices. In Albania, Physical Education Teacher Education (PETE) has undergone significant reforms shaped by European standards, particularly through the Bologna Process and competency-based education policies. Aim: The aim of this study was to examine the Europeanization of PETE in Albania by analyzing the relationships among policy reform, teacher agency, and pedagogical practice. Methods: The main method of the study was qualitative document analysis; the study reviewed national legislation, policy frameworks, and European reports, supplemented by research on PETE and teacher development. Results: Findings show that Albania has achieved substantial structural alignment with EU frameworks; however, gaps remain in implementation, particularly in teacher



professional development, pedagogical innovation, and quality assurance. Conclusion: The study suggests that Europeanization is not only a policy process but also a transformation mediated by teacher agency and classroom practice. Strengthening PETE is essential for improving educational quality and supporting Albania's EU integration.

Keywords: Albania; EU integration; physical education teacher education (PETE); Europeanization; education reform; teacher agency; pedagogical practice; teacher professional development

GOVERNANCE PRACTICES AND RESOURCE MOBILISATION IN NATIONAL OLYMPIC COMMITTEES: A COMPARATIVE ANALYSIS OF THE BALKAN REGION

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Abstract: Introduction Good governance has become a key issue in sports organisational management. National Olympic Committees (NOCs) function in complex ecosystems where they engage in interactions with various stakeholders, including the government, international sport organizations, sports federations at the national level, sponsors, etc. Such interaction influences both the governance practices implemented by the NOCs and their ability to mobilize resources needed for sport development and implementing Olympic programmes. Despite the efforts of international organizations, such as the International Olympic Committee (IOC), to disseminate information about good governance, there is limited knowledge on how governance affects the resource mobilization abilities of NOCs. This research will address this gap through an analysis of NOCs from the Balkan countries. Methods For conducting comparative analysis, a quantitative comparative approach was used through a structured questionnaire distributed to representatives of twelve National Olympic Committees in the Balkan region: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Kosovo, Montenegro, North Macedonia, Romania, Serbia, Slovenia, and Türkiye. This instrument was used to gather information about how NOCs mobilize various organisational resources – financial, human, socio-organisational, moral, and cultural. Data were analyzed descriptively to identify common patterns and differences among the NOCs. Results The results show that most NOCs operate within national policy environments where governmental sport agencies and international Olympic organisations play an important role in shaping governance practices and resource flows. Government funding and IOC/Olympic Solidarity programmes represent the main financial sources for most NOCs, while sponsorship and other self-generated revenues remain more limited. Respondents consistently indicated that governance principles such as transparency, democratic decision-making, accountability, and social responsibility help strengthen stakeholder trust and improve access to partnerships and resources. Resource mobilization across the region appears to rely largely on institutional relationships and partnerships rather than on independent revenue generation. While most NOCs consider themselves organisationally autonomous, many also acknowledge that financial dependence on external actors may influence their operational independence. Discussion/Conclusions The findings suggest that good governance is not only a normative requirement but also a practical tool that can support resource mobilization and organisational credibility. Strengthening governance practices helps NOCs in emerging sport systems enhance partnerships, diversify resources, and reinforce their role within national sport governance structures.

Keywords: sport governance, resource mobilization, National Olympic Committees, Olympic Movement, Balkan region

THE ROLE OF SOCIALIZATION, TECHNOLOGY, AND INNOVATIVE METHODS IN THE INCLUSION OF STUDENTS WITH LANGUAGE DIFFICULTIES IN CONTEMPORARY EDUCATION

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Abstract: Introduction: The inclusion of students with language difficulties represents a significant challenge in contemporary education, as these difficulties directly affect communication, social interaction, and active participation in the classroom. Language barriers may lead to social isolation, reduced self-confidence, and limited academic engagement. Socialization is a key factor in supporting students' overall development, as it facilitates interaction, emotional growth, and learning. In this context, the integration of technology and innovative teaching methods has emerged as a promising approach to enhance inclusive practices and support diverse learners. Methods: This study adopts a qualitative research approach based on a systematic review and critical analysis of contemporary scientific literature. The research examines peer-reviewed articles, educational studies, and reports focusing on socialization processes, communication development, inclusive pedagogy, and the use of assistive technologies for students with language difficulties. The selected literature was analyzed to identify effective strategies and best practices that promote inclusion in modern educational settings. Results: The findings reveal



that the development of communication and social skills plays a crucial role in the successful inclusion of students with language difficulties. Structured interventions that promote interaction and participation significantly improve students' engagement and learning outcomes. Additionally, the use of assistive technologies, such as augmentative and alternative communication (AAC) tools, text-to-speech systems, and digital learning platforms, enhances accessibility, motivation, and classroom interaction. Innovative teaching methods, including student-centered and interactive approaches, further contribute to the creation of inclusive learning environments. Discussion: The study highlights that the combined implementation of socialization strategies, communication-focused interventions, and technology-based tools provides an effective framework for inclusive education. These approaches not only support academic achievement but also foster social integration and emotional well-being. However, their effectiveness depends on teacher training, institutional support, and access to technological resources. Therefore, adopting a holistic and well-structured approach is essential to ensure equal opportunities and meaningful participation for all students.

Keywords: inclusive education, language difficulties, socialization, assistive technology, innovative teaching methods

CROSS-SECTIONAL COMPARISON OF PHYSICAL ACTIVITY PATTERNS AND ACADEMIC ACHIEVEMENT IN ENGINEERING AND DENTAL STUDENTS

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Abstract: Regular physical activity is considered an important determinant of physical and mental health in student populations, yet differences in activity patterns and academic achievement across academic environments remain insufficiently explored. The aim of this study was to compare physical activity indicators and academic achievement between engineering and dental students and to determine whether differences in academic achievement remain after adjustment for selected sociodemographic variables. This cross-sectional study included 271 university students (181 from the Faculty of Electrical Engineering and Computing and 90 from the School of Dental Medicine). Data were collected using a self-administered questionnaire that included sex, age, year of study, self-reported grade point average (GPA), participation in sport or physical activity during the previous 12 months, weekly hours of sport participation, months of activity during the year, walking and cycling during leisure time and a leisure-time activity index. Descriptive statistics were calculated for all variables and differences between faculties were tested using the Mann–Whitney U test for continuous and ordinal variables and the chi-square test for categorical variables. To examine whether faculty affiliation independently predicted academic achievement, a linear regression model was performed with GPA as the dependent variable and faculty, sex, age, and year of study as predictors. Significant differences were found between the two faculties in sex distribution, age, and year of study (all $p < 0.01$). Students from the School of Dental Medicine had significantly higher GPA values than students from the Faculty of Electrical Engineering and Computing (4.23 ± 0.43 vs. 3.66 ± 0.59 ; $p < 0.001$), representing a large effect. They also reported higher walking levels during leisure time (3.78 ± 0.80 vs. 3.09 ± 1.00 ; $p < 0.001$) and a slightly higher leisure-time activity index (24.03 ± 4.29 vs. 22.80 ± 4.73 ; $p = 0.024$). No significant differences were observed in sport participation during the previous 12 months, weekly hours of activity, cycling, or several other activity indicators. In the adjusted regression model, faculty affiliation remained a significant predictor of GPA, with dental students showing higher academic achievement even after controlling for sex, age, and year of study ($B = 0.57$; 95% CI 0.43–0.72; $p < 0.001$). These findings suggest that academic context may be associated with both academic performance and selected movement behaviors in university students, highlighting the need for faculty-specific approaches to student health promotion and lifestyle support.

Keywords: physical activity, academic achievement, university students, cross-sectional study, health behaviour

PREVALENCE AND RISK FACTORS OF OVERUSE MUSCULOSKELETAL INJURIES AMONG GYM USERS IN TIRANA: A CROSS-SECTIONAL STUDY

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Abstract: Introduction: Injuries of the musculoskeletal system resulting from overuse are commonly encountered among individuals who regularly attend fitness centers. These conditions are often associated with excessive training intensity, insufficient recovery periods, and improper exercise execution. The present study aims to examine the prevalence of such injuries in gyms in Tirana, focusing on their determinants, contributing factors,



and preventive approaches. Methodology: A cross-sectional study design was applied through the use of a structured online questionnaire, distributed via Google Forms. Participants provided self-reported data regarding their training background, history of injuries, and level of awareness related to injury prevention strategies. Results: The study sample was mainly composed of male participants, with the majority belonging to the 20–30 age group. Most respondents reported a training experience ranging from one to five years. Increased training load emerged as the primary factor associated with injury occurrence. Although many participants indicated awareness of preventive exercises, a high prevalence of injuries was still observed. Discussion: The results underline the multifactorial etiology of overuse-related injuries, where factors such as training load, exercise technique, and recovery practices play a crucial role. Despite a relatively good level of awareness regarding prevention, inconsistencies in the practical implementation of these strategies remain evident. Conclusions: Overuse injuries constitute a notable issue among gym users in Tirana. Strengthening education on correct training techniques, appropriate load management, and adequate recovery is essential. The adoption of evidence-based preventive measures by both fitness professionals and individuals is necessary to minimize injury risk and support long-term musculoskeletal health.

Keywords: Muscle Injuries, Sports Trauma, Gym, Rehabilitation, Prevention, Functional Overuse

EEG-BASED COGNITIVE MONITORING IN PHYSICAL EDUCATION: A CONCEPTUAL FRAMEWORK ENHANCED BY ARTIFICIAL INTELLIGENCE

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Abstract: The incorporation of new technologies in the educational process changes the understanding of engagement and the learning process itself. In physical education, for example, it is difficult to track real-time cognitive engagement of students when performing physical activities. This paper offers an architectural design for incorporating low-cost EEG wearables, such as Cyton Daisy, to monitor cognitive engagement in PE lessons. The offered system framework includes signal acquisition from brainwaves using wearables, preprocessing the acquired data and eliminating interference, extracting information using alpha, beta, and theta bands, and finally obtaining simple cognitive measures like focus and relaxation. The results can be converted into data that can be used as real-time feedback and help change teaching techniques. Apart from the framework, there will be a discussion on the involvement of Artificial Intelligence in analyzing the obtained data. Thus, the application of AI will help identify specific patterns and personalize students' learning experience, although the involvement of technology raises concerns about ethics, data protection, and other issues. The presented system architecture is based on the idea of creating accessible solutions and not working with complicated models. Hence, this project is relevant for application in real practice.

Keywords: EEG, OpenBCI, Artificial Intelligence, Physical Education, Cognitive Engagement, Educational Technology

THE IMPACT OF PHYSICAL ACTIVITY ON MOTOR DEVELOPMENT AND SOCIAL SKILLS IN CHILDREN WITH SPECIAL NEEDS.

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Abstract: Introduction Physical activity plays a crucial role in the overall development of children, particularly those with special needs, who often experience difficulties in motor and social functioning. Previous research has shown that participation in structured physical activity can positively influence gross and fine motor skills, enhance social interaction, and improve self-confidence. The aim of this study is to examine the impact of physical activity on motor development and social skills in children with special needs. Methods This study is based on a narrative literature review and analysis of existing empirical studies and meta-analyses related to physical activity interventions in children with neurodevelopmental disorders. The reviewed literature includes experimental, observational, and intervention-based studies focusing on school-aged children with special needs. Data were synthesized using descriptive and comparative analysis in order to identify common findings regarding the effectiveness of physical activity in improving motor performance and social functioning. Key sources included meta-analyses and clinical intervention frameworks from peer-reviewed journals in pediatrics, physiotherapy, and developmental psychology. Results The reviewed studies consistently demonstrate that physical activity interventions lead to significant improvements in motor coordination, balance, and overall physical performance in children with developmental disorders. Additionally, positive effects were observed in social functioning,



including increased peer interaction, communication skills, and participation in group activities. Evidence from meta-analyses suggests that structured and adapted physical activity programs are particularly effective in enhancing both motor and social outcomes compared to unstructured activities or minimal intervention. Discussion/Conclusions Findings indicate that physical activity is a valuable non-pharmacological intervention for supporting the developmental needs of children with special needs. Its benefits extend beyond physical improvement, contributing significantly to social inclusion and emotional well-being. The integration of adapted physical activity programs in educational and therapeutic settings is recommended to maximize developmental outcomes and improve quality of life in this population. Further empirical research with standardized measurement tools is needed to strengthen evidence in this field. Keywords Physical activity, special needs children, motor development, social skills, neurodevelopmental disorders.

Keywords: Physical activity, special needs children, motor development, social skills, neurodevelopmental disorders.

ASSESSMENT OF BMI AND PHYSICAL PERFORMANCE IN YOUNG FOOTBALL PLAYERS: INTEGRATING ANTHROPOMETRIC CHARACTERISTICS, PHYSICAL PERFORMANCE TESTS, AND BODY COMPOSITION PARAMETERS

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Abstract: Introduction: Given the multifactorial physical demands of football, performance outcomes are closely associated with morphological and physiological attributes, particularly those related to body composition. The present study aims to investigate the relationship between body mass index (BMI), anthropometric characteristics, body composition, and physical performance in youth football players. Methodology: A cohort of young football players was assessed using standardized anthropometric measurements, including body mass, stature, body fat percentage, and skeletal muscle mass. Physical performance was evaluated through a battery of field-based tests designed to quantify key fitness components, namely speed, muscular strength, and aerobic endurance. Statistical analyses were conducted to determine the associations between BMI and performance metrics, as well as to evaluate the predictive value of body composition variables on athletic performance. Results: demonstrate statistically significant correlations between body composition parameters and physical performance indicators, suggesting that lower body fat percentage and higher muscle mass are associated with superior performance outcomes. These findings emphasize the relevance of systematic monitoring and individualized assessment of anthropometric and body composition profiles in optimizing athletic development. Discussion/Conclusion: The study contributes to the existing body of knowledge by providing evidence-based insights applicable to coaching practice, sports medicine, and physical education. It supports the implementation of targeted training and conditioning strategies aimed at enhancing performance and long-term athlete development in youth football.

Keywords: : BMI, Anthropometric Parameters, Physical Performance, Body Composition, Football

SPORTS ACTIVITIES AS A COMPONENT OF THE “AFTER-SCHOOL” PROGRAM

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Abstract: Within the framework of the “After-School Education” program, a broad inter-institutional and professional dialogue has commenced in Albania. The dialogue has resulted in the articulation of a shared vision to transform after-school education into a pillar of the education system – a comprehensive developmental space where students are empowered through knowledge, creativity, sports and active community participation. The current trajectory aims to establish a national framework for after-school education characterized by clear standards and unified implementation. The objective of this study is to demonstrate the necessity of expanding sports activities (specifically gymnastics, athletics, and dance) as core components of after-school programming. To this end, a survey was conducted among in-service physical education teachers and sports experts. The results indicate that activities in gymnastics, athletics, and dance serve as essential tools for well-being and healthy development, placing children in practical situations where they can experience and master the fundamental elements of movement and sport. Physical activities (games and sports) are not merely recreational for children;



they represent a meaningful endeavor that dominates much of their lives, absorbing significant time and energy while cultivating skills and social behaviors fundamental to healthy development. Furthermore, these sports activities emphasize the maintenance of hygiene, teaching students how to manage personal cleanliness during and after physical exertion. Participation fosters safe practices that, if maintained throughout a lifetime, serve as a defense against numerous diseases. The findings suggest that to successfully expand after-school sports programs, it is necessary to empower schools with greater autonomy and sustainable structures, alongside investments in professional development and the involvement of experts. The "After-School" program introduces a novel approach to the Albanian school system. Consequently, Higher Education Institutions (HEIs), as leaders of educational advancement, should integrate strategies into their curricula that contribute to the robust integration of this concept within initial teacher training.

Keywords: sports activities, after school program, teacher

BRIDGING TRADITIONAL AND DIGITAL PRACTICES: ENHANCING WELLBEING IN EDUCATION

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Abstract: Digitalisation, or the incorporation of digital technologies into educational practices, has profoundly transformed how teachers and students interact within the learning environment. Traditional education, once primarily based on face-to-face classroom interactions, has evolved significantly in recent years. Teaching is inherently interactive, involving meaningful exchanges between educators and learners. Educators at all levels are increasingly employing technological tools that enhance the delivery of information, making complex concepts clearer and more accessible through both visual and explanatory methods. Successful integration of traditional and digital teaching approaches requires teachers not only to understand the tools themselves but also to recognize how technology can enhance learning outcomes and student wellbeing. This paper explores the importance of blending traditional and digital educational practices and examines their impact on learners' engagement and overall wellbeing. The study highlights major developments in digital education and demonstrates that combining traditional and digital methods supports improved focus, enhanced communication, easier access to information and multimedia resources, and personalized learning experiences.

Keywords: education, digital education, wellbeing in education

AI-POWERED COACHING: TRANSFORMING SPORTS EDUCATION THROUGH INTELLIGENT TOOLS

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Abstract: Background: Artificial intelligence is changing sports education, affecting how future coaches, physical education teachers, and athletes learn and train. Although there's increasing interest, there's still a lack of practical frameworks for implementing AI tools in academic and pre-university sports settings. Purpose: This presentation examines current uses and potential for AI in sports education, highlighting their impact on teaching methods, student involvement, and providing data-driven feedback. Methods: The study reviews emerging AI applications like computer vision for movement analysis, wearable data analytics, and personalized training algorithms. It also includes case studies from physical education programs that have tried out AI-enhanced learning modules. Key Findings: AI tools possess the capability to improve... 1. Give students immediate feedback on their movements and techniques. 2. Evaluate skills automatically and keep track of progress without manual effort. 3. Make physical education more inclusive by offering activities tailored to different abilities. 4. Use data to plan lessons effectively. However, there are hurdles like gaps in digital infrastructure, the need for teacher training, and concerns about student data privacy. What does this mean for educators? Sports teachers should consider blending AI tools with traditional teaching methods—AI can provide objective feedback while maintaining human interaction in the classroom. Here's what could help: affordable AI toolkits for schools, collaboration with computer science departments, and trial projects within FIEPs networks. In conclusion, when used wisely, AI tools enhance rather than replace sports educators. They help tailor instruction to individual needs, inspire diverse groups of learners, and connect theory with practical application in modern sports education.

Keywords: Keywords: artificial intelligence, sports pedagogy, physical education technology, AI in coaching, educational innovation



RECLAIMING ADOLESCENCE FROM SCREENS: A SOCIAL WORK AND SPORT-BASED INTERVENTION MODEL ADDRESSING TECHNOLOGY ADDICTION IN SECONDARY SCHOOLS IN ELBASAN, ALBANIA

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Abstract: In the context of rapid digitalization, technology addiction among adolescents has become a critical challenge for educational and social systems, particularly in transitional societies. This study explores the role of social workers in designing and implementing sport-based interventions to reduce problematic technology use among adolescents in three secondary schools in Elbasan, Albania: “Dhaskal Todri” High School, “Kostandin Kristoforidhi “High School and “ Arianiti” High School. Grounded in social work and psychosocial development theories, the study tests the hypothesis that structured participation in sport, combined with guided social work support, leads to a measurable reduction in screen dependency and improvements in adolescents’ social and emotional well-being. A purposive sample of 45 students aged 13–16, identified as exhibiting excessive technology use (5–7 hours daily), participated in a 12-week intervention program integrating team sports and reflective group sessions. A mixed-methods approach was employed, combining quantitative measures (pre- and post-intervention surveys assessing screen time, social engagement, and emotional regulation) with qualitative data (semi-structured interviews and field observations). Findings indicate a significant reduction in daily screen time (approximately 30%), alongside improved peer relationships, increased school participation, and enhanced emotional resilience. Participants reported a stronger sense of belonging and reduced feelings of isolation. The study highlights the central role of the social worker as facilitator, mediator, and program coordinator, ensuring the intervention’s inclusivity and sustainability. Sport is conceptualized not merely as physical activity, but as a structured social environment fostering discipline, cooperation, and identity development. The findings support the integration of sport-based interventions within school social work practices as an effective, scalable, and culturally adaptable model. The paper concludes with policy-oriented recommendations, advocating for institutional support, interdisciplinary collaboration, and the incorporation of preventive programs targeting technology addiction within the Albanian educational system.

Keywords: technology addiction; adolescents; social work; sport-based intervention; school-based programs; psychosocial development; youth well-being

OPTIMIZING YOUTH FOOTBALL DEVELOPMENT IN ALBANIA: INTEGRATING MASS PARTICIPATION WITH STRUCTURED TALENT PATHWAYS AND ATHLETIC CONDITIONING EXPERTISE

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Abstract: Football represents the most widely practiced sport among youth in Albania, serving as a key platform for physical development, socialization, and community engagement. Within this context, current sport structures emphasize broad participation, offering valuable opportunities for inclusion and active lifestyles. Building on these strengths, this paper explores how youth football systems can be further optimized through the integration of structured talent development pathways and specialized athletic conditioning practices. The study aims to examine the effectiveness of a differentiated training model that combines mass participation with progressive performance-based grouping. It is guided by the hypothesis that incorporating systematic physical assessment and tailored conditioning programs within youth football settings enhances both individual development and overall training efficiency. The research is based on a structured intervention conducted in school and community football programs in Elbasan, involving 52 participants aged 12–16. Players were initially assessed using standardized motor and physical performance tests, including sprint speed, agility, endurance, and coordination. Based on these indicators, participants were grouped into development tiers, allowing for differentiated training loads and objectives while maintaining an inclusive framework. A quasi-experimental design was employed over a 12-week period, with pre- and post-intervention measurements. The training program integrated technical football sessions with targeted athletic conditioning, supervised by a specialized conditioning coach. Data collection included performance metrics (speed, endurance, agility), training attendance, and observational assessments of engagement and progression. Results indicate measurable improvements across all groups, with more pronounced gains in the advanced development tier, particularly in speed ($\approx 15\%$), agility ($\approx 12\%$), and aerobic capacity ($\approx 10\%$). Importantly, participants across all levels demonstrated increased motivation and engagement, suggesting that differentiated training can coexist effectively with inclusive participation models. The findings highlight the added value of integrating athletic conditioning expertise into youth football programs. The



conditioning coach plays a central role in performance assessment, individualized load management, and long-term athletic development, complementing technical coaching and pedagogical approaches. The paper proposes a structured model for youth football development in Albania that aligns inclusive participation with performance-oriented pathways. It concludes with practical recommendations for embedding systematic assessment protocols, tiered training structures, and interdisciplinary collaboration within school and community sport systems.

Keywords: youth football development; athletic conditioning; talent pathways; physical performance; training differentiation; school sport; long-term athlete development

SPORT AS A PSYCHOSOCIAL INTERVENTION: ENHANCING MENTAL HEALTH AND SOCIAL INCLUSION AMONG ADOLESCENTS THROUGH SCHOOL-BASED SOCIAL WORK PRACTICES

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Abstract: Adolescent mental health has become an increasing concern worldwide, with rising levels of anxiety, depression, and social withdrawal affecting students' well-being and academic performance. Within this context, this paper examines the role of social workers in utilizing sport as a psychosocial intervention to promote mental health and social inclusion among adolescents in school settings. The study is based on a school-based intervention implemented in three secondary schools in Elbasan, Albania, where structured sport activities were integrated into social work practice as a preventive and developmental approach. The research is guided by the hypothesis that regular participation in organized sport, supported by social work interventions, contributes to reduced symptoms of anxiety and social isolation while enhancing self-esteem and peer connectedness. A sample of 50 students aged 14–17, identified as experiencing emotional distress or social withdrawal, participated in a 10-week program combining physical activity with group support sessions. The intervention included team sports, cooperative games, and guided discussions focused on emotional expression and interpersonal skills. A mixed-methods design was employed, including standardized self-report measures (anxiety, self-esteem, and social connectedness), observational data, and semi-structured interviews with participants and school staff. Quantitative findings demonstrate a noticeable decrease in self-reported anxiety levels (approximately 25%) and a significant increase in perceived social support and self-confidence. Qualitative insights reveal that sport created a safe and engaging environment for emotional release, peer bonding, and identity development. The role of the social worker is emphasized as a key facilitator in bridging emotional support with structured physical activity, ensuring that sport environments are inclusive and psychologically supportive. The intervention also fostered stronger collaboration between schools, families, and community actors. The findings suggest that integrating sport into school social work practices offers a holistic, low-cost, and sustainable strategy for improving adolescent mental health and strengthening social cohesion. The paper concludes with recommendations for embedding psychosocial sport programs within educational policies and youth services.

Keywords: mental health; adolescents; social work; sport intervention; social inclusion; school-based practice; emotional well-being; youth development

THE IMPACT OF INTEGRATED PHYSICAL CONDITIONING COACHING AND NUTRITIONAL EDUCATION ON PHYSICAL PERFORMANCE AND HEALTHY HABITS IN YOUTH FOOTBALL PLAYERS

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Abstract: The development of healthy lifestyle habits and optimal physical performance in youth football players requires a structured and evidence-based approach that integrates physical conditioning coaching with nutritional education. This study investigates the impact of a comprehensive pedagogical methodology implemented by a physical conditioning coach on young football players aged 13–17 in Elbasan, Albania. A total of 60 participants were selected using a stratified random sampling method to ensure representation across age groups. The intervention lasted 12 weeks and was based on a periodized training model, incorporating progressive overload, sport-specific drills, and recovery protocols. The nutritional component included weekly educational sessions, individualized dietary plans, and continuous monitoring of eating behaviors. Data collection involved pre- and post-intervention measurements, including aerobic capacity (VO₂ max), speed (30-meter sprint test), muscular strength (vertical jump test), and body composition (BMI and fat percentage). In addition, dietary habits were assessed using structured questionnaires and food frequency analysis. Statistical analysis was conducted using paired t-tests and ANOVA to determine significant differences between baseline and post-intervention results. The



findings revealed statistically significant improvements ($p < 0.05$) in aerobic endurance (+12%), sprint performance (+8%), muscular power (+10%), and body composition (reduction in body fat by 6%). Furthermore, participants demonstrated a marked improvement in nutritional knowledge and adherence to balanced diets, with a 40% increase in healthy eating behaviors. The results highlight the critical role of the physical conditioning coach in delivering integrated training and nutrition programs tailored to youth athletes. The study concludes that combining physical conditioning with nutritional education significantly enhances both performance outcomes and long-term health behaviors in young football players. It is recommended that similar multidisciplinary approaches be systematically implemented in youth sports development programs.

Keywords: youth football, physical conditioning coach, nutrition education, performance, methodology, VO2 max, Elbasan

ACADEMIC STRESS, EMOTIONAL AND SOCIAL INTOLERANCE AMONG STUDENTS: AN EMPIRICAL ANALYSIS

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Abstract: Academic stress is one of the most significant factors affecting students' emotional well-being in higher education, often associated with difficulties in emotional processing and social functioning. This study aims to examine the relationships between academic stress, emotional intolerance, and social intolerance, as well as to assess the role of coping strategies within this context. Data were collected through a structured online questionnaire administered to a sample of 217 university students. The instrument included four main dimensions: academic stress, emotional intolerance, social intolerance, and coping strategies. Data analysis was conducted using descriptive statistics, reliability analysis (Cronbach's alpha), Pearson correlations, and linear regression models, in order to identify relationships among variables and their predictive power. The results indicated that students reported relatively high levels of academic stress and emotional exhaustion. Correlation analysis revealed a strong association between academic stress and emotional intolerance ($r = .80, p < .001$), as well as a significant relationship with social intolerance ($r = .63, p < .001$). Furthermore, emotional intolerance was strongly associated with social intolerance ($r = .76, p < .001$). Regression analyses showed that academic stress is a strong predictor of emotional intolerance, explaining a substantial proportion of its variance ($R^2 = .635$). At the same time, emotional intolerance emerged as the primary predictor of social intolerance ($\beta = .695, p < .001$), while the direct effect of academic stress on the social dimension was not statistically significant. On the other hand, coping strategies, although reported at relatively high levels, did not demonstrate a strong protective effect in the regression models, suggesting that they may not always be effective in mitigating the impact of high academic stress. In conclusion, the findings suggest that the impact of academic stress on students is primarily mediated by difficulties in emotional regulation, which subsequently affect social functioning. This highlights the importance of interventions focused on developing emotional competencies as a key component in improving student well-being and functioning in higher education.

Keywords: academic stress, emotional intolerance, emotion regulation, emotional well-being, university students

THE ROLE OF FOOTBALL IN IMPROVING THE CLASSROOM CLIMATE IN PRIMARY EDUCATION

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Abstract: A positive classroom climate is considered an important factor that directly influences the creation of a stimulating environment and the active involvement of students in the educational process. An appropriate classroom atmosphere can affect motivation, cooperation, and emotional self-regulation. Sports activities, especially football, are often associated with the development of social and emotional skills which can also be reflected in the classroom environment. This paper aims to analyze the role that football, as a physical activity, has in classroom climate, by evaluating its effects on students' behavior, cooperation, and engagement in the learning process. Furthermore, it will examine how participation in football influences the social and emotional development of students in the school environment. As part of this study, research will be conducted through a structured questionnaire that will be addressed to primary school teachers. The methodology used in this paper is descriptive. In this study, a quantitative research approach has been used. The participants of this research are 100 primary education teachers (random sample). As a data collection instrument, a questionnaire based on a Likert scale was used. The data from this research were analyzed using the SPSS 26 program, employing descriptive and



inferential statistical methods to examine relationships between variables and to interpret the teachers' responses regarding the impact of football on classroom climate. The aim is to collect data on teachers' perceptions regarding the role of sports activities, especially football, in students' motivation, cooperation, and emotional self-regulation during the learning process. The research results emphasize that football plays a fundamental role in improving the classroom climate, contributing to the creation of a more cooperative, more motivating, and emotionally more stable environment for students. This suggests that participation in sports activities can contribute to creating a more positive and cooperative climate in the school environment.

Keywords: Keywords: classroom climate, physical activity, football, students, primary education.

BEYOND SURVIVAL: SPORT PSYCHOLOGY AS A BRIDGE

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Abstract: The Council of Europe defines local integration as a gradual process comprising three interrelated dimensions: legal, economic, and socio-cultural. While policy efforts have advanced considerably on the first two dimensions, the socio-cultural dimension—and particularly the psychological experience of belonging—remains the least addressed and the most difficult to measure. This paper examines the role of sport psychology in bridging this gap, drawing on the Council of Europe's evolving frameworks for sport-based integration. A narrative literature review was conducted, incorporating Council of Europe policy documents and EPAS reports (2022–2025), peer-reviewed literature on sport-based integration and acculturation, and sport psychology measurement tools. Search terms included sport-based integration, refugee belonging, socio-cultural integration, social identity, perceived belonging, sport psychology, and acculturation. Systematic searches were conducted across PubMed, PsycINFO, SPORTDiscus, and Google Scholar, drawing on integration framework and self-determination theory developments. Findings are further contextualised through the author's participation in Council of Europe study sessions on the integration of young migrants and refugees. Council of Europe institutional momentum in sport-based integration has accelerated: the 2023 EPAS Diversity Conference identified the inclusion of migrant and refugee youth through sport as a policy priority, and subsequent Governing Board meetings through 2025 reflect continued commitment to developing practical tools, including a handbook currently in development. However, a consistent gap persists: belonging—identified by EU integration indicator research as resistant to standard policy metrics—remains unmeasured within these frameworks. Recent scholarship demonstrates that sport creates unique transnational belonging spaces beyond traditional integration measures. Sport psychology provides both the theoretical framework and the measurement tools needed to operationalize belonging within the Council of Europe's sport-based integration initiatives. Validated instruments including the Perceived Belonging in Sport Scale, the Social Identity Questionnaire for Sport, and self-determination theory frameworks offer concrete measurement solutions. Integrating a psychological lens into programme design and evaluation represents a concrete and achievable next step in strengthening the evidence base for sport as a tool for socio-cultural integration.

Keywords: refugee integration, sport psychology, belonging, socio-cultural integration, EPAS, Council of Europe, perceived belonging, self-determination theory

PROMOTING CHILDREN'S HEALTH EDUCATION: EVIDENCE FROM THE "SCHOOLS FOR HEALTH" PROJECT

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Abstract: Introduction: This study presents the "Schools for Health" initiative, a nationwide project launched in 2020 by Swiss Agency for Development and Cooperation in partnership with Save the Children, focusing on health promotion and the prevention of non-communicable diseases (NCDs) in Albania. The project aims to reduce risk factors among children aged 6–16 through integrated interventions in the school environment, including healthy nutrition, physical activity, mental health, and psychosocial well-being. Its implementation is structured in two phases (2020–2021; 2021–2025), providing a sustainable model for school-based health promotion. Within this framework, Barleti Group shpk, in collaboration with Barleti Training and Testing Center and Albanian Institute for Public Affairs, implemented an intervention program in Tirana through 10 workshops under the My School platform, aiming to strengthen local stakeholders and foster inter-sectoral collaboration. Methods: The study adopts a descriptive-analytical approach to examine the main components of the intervention, including health education, promotion of physical activity, mental health, and community engagement. The analysis is based on qualitative data derived from project documentation and field practices. A total of 110 participants from diverse stakeholder groups were involved, including health professionals, local government representatives, school staff, parents, and students. The methodology relied on interactive and participatory



approaches. Results: The findings indicate increased awareness of healthy behaviors and improved capacities among participants to address health-related issues in schools. Additionally, strengthened collaboration was observed among educational institutions, health structures, and the local community. Discussion: The “Schools for Health” project represents an integrated and sustainable model for school-based health promotion, with strong potential for replication in other national and regional contexts.

Keywords: health promotion; school-based interventions; mental health; healthy nutrition; psychosocial well-being.

INTEGRATION OF STRUCTURED SPORT AND APPLIED BEHAVIOR ANALYSIS TO IMPROVE DISCIPLINE IN PRESCHOOL CHILDREN WITH BEHAVIORAL DISORDERS: A QUASI-EXPERIMENTAL STUDY IN ELBASAN, ALBANIA

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Abstract: Behavioral disorders in early childhood represent a significant challenge for social development and effective participation in educational environments. In the Albanian context, interventions are often fragmented and lack integrated, evidence-based models that combine therapeutic approaches with practical, play-based activities applicable in preschool settings. This study aims to evaluate the effect of an integrated intervention combining structured sport activities with Applied Behavior Analysis (ABA) principles on improving discipline in preschool children aged 5–6 years with behavioral disorders. A quasi-experimental design with a control group and pre-test/post-test measurements was employed. The sample consisted of 30 preschool children selected randomly from public and private kindergartens in the city of Elbasan, Albania, and assigned into an experimental group (n=15) and a control group (n=15). The experimental group participated in an 8-week intervention program consisting of structured physical activities integrated with ABA techniques, including positive reinforcement, clear instruction delivery, behavioral modeling, and token economy systems. The control group continued their regular kindergarten activities without structured intervention. Data were collected through systematic classroom and activity-based observations, as well as standardized behavioral rating scales completed by educators. The assessment focused on key discipline-related indicators, including rule-following, impulse control, attention to instructions, and peer cooperation. Results indicated a significant improvement in all measured behavioral indicators in the experimental group compared to the control group, suggesting a positive effect of the integrated intervention. In conclusion, the findings support the effectiveness of combining structured sport activities with ABA principles as a practical and applicable approach for improving discipline in preschool children with behavioral disorders. The study highlights the importance of developing integrated intervention models within early childhood education systems in Albania and similar contexts.

Keywords: behavioral disorders; preschool children; sport-based intervention; applied behavior analysis (aba); discipline; albania

REHABILITATION BEYOND MEDICATION: INTEGRATING PHYSICAL ACTIVITIES INTO PSYCHIATRIC TREATMENT FOR INDIVIDUALS WITH MENTAL HEALTH PROBLEMS

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Abstract: This paper addresses the importance of integrating physical activities into the treatment and rehabilitation of patients in psychiatric institutions, placing the focus beyond pharmacological treatment. In clinical practice, treatment is often centered on stabilizing symptoms through medication, while psychosocial and rehabilitative aspects remain limited, especially in contexts where community-based services are lacking. The study is conducted using a qualitative method based on practical experience in social work within a psychiatric institution. The aim is to highlight the role of physical activities as part of the rehabilitation process for patients with mental health disorders, as well as their impact on psychosocial functioning and preparation for reintegration into the community. Data were collected through direct observation, continuous interaction with patients, active involvement in organizing and implementing physical activities within the institution, as well as the presentation of a case study. Based on practical experience in a psychiatric hospital, this paper highlights the challenges related to the long-term institutionalization of patients, as a result of the lack of family and community support. In this context, physical activities are presented as an effective rehabilitative tool that contributes to improving mental health, enhancing social functioning, and strengthening individual autonomy. The role of the social worker is



emphasized as crucial in promoting and organizing these activities, as well as in advocating for patients' rights to comprehensive care. The paper concludes with recommendations for the systematic integration of physical activities into psychiatric treatment and for the development of supportive community services. **Keywords:** Mental health, physical activity, psychosocial rehabilitation, social work, community reintegration.

Keywords: Keywords: Mental health, physical activity, psychosocial rehabilitation, social work, community reintegration.

ADAPTED PHYSICAL EDUCATION AS A MECHANISM FOR PROMOTING SOCIAL INCLUSION OF PERSONS WITH DISABILITIES

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Abstract: Abstract In recent decades, the concept of social inclusion has gained particular importance in educational and social policies at a global level, aiming to create inclusive educational systems that ensure equal participation for all individuals. In this context, persons with disabilities continue to face numerous physical, social, and institutional barriers that limit their access to educational and social activities. Adapted physical education represents a pedagogical and social approach that aims to modify physical and sports activities so that they are accessible and appropriate for individuals with diverse physical, sensory, or intellectual needs. Through the adaptation of teaching methods, equipment, and learning environments, adapted physical education creates opportunities for active participation and the holistic development of individuals with disabilities. The purpose of this study is to analyze the role of adapted physical education in promoting the social inclusion of persons with disabilities in educational institutions and within the community. The study also aims to highlight the impact of adapted physical activities on the development of motor skills, the enhancement of self-confidence, and the improvement of social interactions between individuals with and without disabilities. The study methodology is based on a theoretical and critical analysis of contemporary scientific literature in the fields of inclusive education, sports pedagogy, and social sciences, as well as the examination of international practices and models of adapted physical education. The results of the analysis indicate that adapted physical education programs have a significant impact on improving the physical and psychological well-being of persons with disabilities. Participation in adapted physical activities contributes to the development of motor skills, increases self-esteem, and enhances communication and social cooperation skills. Furthermore, these programs positively influence the reduction of stereotypes and social prejudices, promoting the creation of a more inclusive culture within educational institutions. The conclusions of the study emphasize that adapted physical education constitutes an important component of inclusive education and an effective tool for promoting social inclusion. The integration of structured adapted physical activity programs, the development of teachers' professional competencies, and the creation of appropriate sports infrastructure are key elements for ensuring equal and sustainable participation of persons with disabilities in physical activities and social life.

Keywords: Keywords: adapted physical education, social inclusion, persons with disabilities, inclusive education, physical activity

THE IMPACT OF PHYSICAL EDUCATION ON PSYCHO-EMOTIONAL DEVELOPMENT IN EARLY CHILDHOOD: AN INTERDISCIPLINARY PERSPECTIVE

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Abstract: Early childhood represents a critical developmental period during which physical activity plays a fundamental role not only in motor growth but also in psycho-emotional maturation. Recent interdisciplinary research highlights the importance of structured physical education programs in fostering emotional regulation, social interaction, and self-confidence among young children. The purpose of this study is to examine the impact of physical education on psycho-emotional development in early childhood through an integrated pedagogical and psychological perspective. The study adopts a mixed-methods approach combining observational assessment, teacher evaluations, and structured activity-based interventions implemented with children aged 4–6 years in early education settings. Data were collected through behavioral observation protocols, socio-emotional development scales, and qualitative feedback from educators involved in physical education sessions. The interdisciplinary framework integrates concepts from developmental psychology, physical education pedagogy, and early childhood education theory. The findings indicate that regular participation in structured physical education activities significantly improves emotional expression, cooperation skills, attention regulation, and peer



interaction. Furthermore, movement-based learning environments were found to enhance children's self-esteem and motivation to participate in group activities, contributing positively to their overall well-being. In conclusion, physical education should be considered a key component of early childhood education policies and curricula due to its multidimensional contribution to psycho-emotional development. An interdisciplinary approach strengthens the effectiveness of physical education programs and supports holistic child development during the early formative years.

Keywords: Keywords: physical education, early childhood, psycho-emotional development, interdisciplinary approach, child well-being

LONGITUDINAL STUDY OF BIOLOGICAL MATURATION STATUS, PHYSICAL ACTIVITY LEVEL, AND PHYSICAL FITNESS IN CHILDREN AND ADOLESCENTS

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Abstract: Introduction: Biological maturation, assessed through peak height velocity (PHV), represents a key indicator of development during puberty and may vary substantially between individuals (Malina et al., 2004). Physical activity and physical education play a significant role in the development and health of youth (Cumming et al., 2012), while gender differences and socio-cultural factors influence physical activity levels (Miller et al., 2018; Spencer et al., 2015). The World Health Organization recommends at least 60 minutes of daily physical activity for children and adolescents (Bull et al., 2020; Guthold et al., 2020). Furthermore, evidence suggests that increased physical education time is associated with improved physical fitness outcomes (Kryeziu et al., 2023; UNESCO, 2024). Therefore, the primary aim of this study is to longitudinally examine the relationship between biological maturation status, physical activity level, and physical fitness in children and adolescents. Methods: This study employs a longitudinal design including children and adolescents aged 9-17 years. Participants are divided into two groups: a control group (90 minutes/week of physical education) and an intervention group (135 minutes/week). Data are collected at 12-week and 24-week intervals. Biological maturation is assessed using maturity offset (PHV), physical activity level is evaluated through MET, and physical fitness is measured using standardized indicators. Results: It is expected that the group exposed to 135 minutes of physical education per week will demonstrate greater improvements in physical activity levels and physical fitness compared to the control group. Additionally, biological maturation is anticipated to significantly influence physical performance, with notable differences across age and gender. Discussion/Conclusions: This study is expected to contribute to advancing knowledge regarding the role of biological maturation and physical activity in youth development. A differentiated approach that considers variability in biological maturation and developmental stages may enhance the effectiveness of school-based interventions and promote higher levels of physical activity and health. Keywords: biological maturation; physical activity; physical fitness; PHV; longitudinal study

Keywords: biological maturation, physical activity, physical fitness, PHV, longitudinal study

STRENGTHENING DEVELOPMENTAL PSYCHOLOGY COMPETENCIES IN PRE-SERVICE TEACHER EDUCATION: CHALLENGES AND EDUCATIONAL IMPLICATIONS

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Abstract: The development of competencies in developmental psychology is a critical component of pre-service teacher education (also for pre-service teacher education in the field of physical education and sports), as it equips future teachers with the ability to understand and respond to students' cognitive, emotional, and social needs. The European competence frameworks for teachers emphasize the need for in-depth knowledge of student development (European Commission, 2021). However, in the context of the unified national teacher education programs in Albania, introduced and restructured in recent years, developmental psychology is taught during the first year of the Bachelor or Master study program through a set load of lectures and seminars, without the possibility of dedicated hours for laboratory or school-based observational practices. Also, the subject of developmental psychology is completed before students engage in pedagogical practice. This study explores the challenges associated with strengthening developmental psychology competencies among pre-service teachers and examines the implications for teacher education programs. Using a mixed-methods approach, quantitative data were collected through structured questionnaires administered to first-year preservice teachers, while qualitative insights were gathered through focus group discussions and interviews with teacher educators. Findings indicate a significant gap between theoretical understanding and the ability to apply developmental



psychology concepts in educational contexts. This gap is consistently attributed to the absence of structured experiential learning opportunities and limited integration between theoretical input and practice-based engagement. The study demonstrates that a lecture-seminar dominant model without observational practice is insufficient for strengthening developmental psychology competencies. It highlights the need for curriculum redesign, experiential learning integration, and competency-based approaches. Implications for curriculum reform in Albania and teacher education policy in line with European standards are discussed.

Keywords: Developmental psychology competencies, practice-based teacher education, experiential learning, curriculum design.

IMPORTANCE OF SPORTS ACTIVITY FOR COGNITIVE, EMOTIONAL AND SOCIAL IMPROVEMENT IN DIFFERENT AGES

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Abstract: The importance of physical activity and sports activities for the improvement not only of the cognitive but also social and emotional abilities of the child in addition to the motor one is an issue that has raised attention in the therapeutic processes applied among psychologists in support of many studies but also data from direct practice. A combination of therapeutic techniques with sports activities in the clinical therapeutic progress especially in early age groups but also later seems to be very efficient. Emphasizing the inclusion of these activities has brought direct results of optimal healing as they directly affect the improvement of emotional, interactive and cognitive skills. The aim of this study is to further collect evidence-based data that show the important connection between cognitive, social and emotional benefits and sports activity. The methodology used is a survey with professionals in the field through semi-structured interviews. Comparative data with groups that apply and do not apply sports activities were used to analyze the results of the study. Some of the findings show that in almost every age group, the application of sports activities increases the quantity and quality of social interaction, improves emotional state and cognitive skills inside and outside the clinical psychotherapeutic setting. These data suggest that in the future a modification of the therapeutic goals and techniques used by psychologists is necessary to achieve the success of treating the problems in focus.

Keywords: Sport Activity, Psychotherapy, Improvement, Cognitive Abilities, Social Abilities

FROM STRESS TO SUCCESS: THE ROLE OF PSYCHOLOGICAL COUNSELING IN ENHANCING STUDENT WELL-BEING AND ACADEMIC PERFORMANCE

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Abstract: The importance of psychological counseling services in the academic sphere and student life lies in their positive impact on students' mental well-being and academic performance because the counseling psychologists serve persons of all ages and cultural backgrounds in individual, group (including couples and families), workplace, organizational, institutional, and community settings. At the same time, they work even with groups and communities to assist them in addressing or preventing problems, as well as to improve the personal and interpersonal functioning of individual members. Such services help students face the social and academic challenges of university life, significantly improving their academic performance and enhancing their overall effectiveness. High levels of stress, as a state of worry or mental tension caused by a difficult situation are associated not only with the start of a new academic year, exam periods, and graduation but also with the role that university friendships play in students' lives. These situations may lead to issues related to anxiety, self-confidence, emotional outbursts, depression, academic productivity, and overall student life satisfaction—all of which negatively affect academic performance. Everyone experiences stress to some degree and the way we respond to stress, makes a big difference to our overall well-being. Further more, stress is a natural human response that prompts us to address challenges and threats in our lives. All above, make the counselling services at university students is very important. This study aims to explore the importance of university counseling services in reducing stress and anxiety in order to increase academic performance through specific therapeutic interventions. The use of techniques such as restructuring thought patterns, mindfulness exercises, and stress management seminars with students is effective in helping them reformulate negative thinking patterns, manage their reactions to stress, and develop adaptive coping mechanisms with the aim of improving their ability to concentrate on studying. This study will compare students' academic outcomes over two semesters: one semester without psychological counseling support and one after psychological counseling support has been integrated. Recognizing the importance of psychological services, we will assess the significant impact of regular attendance at counseling services for the purpose of managing stress and developmental issues. Stress and developmental issues not only affect students' studies but are also associated with decreased overall satisfaction and motivation to study and perform in the academic sphere. The findings suggest that the presence of such a structure in



universities, aimed at providing psychological counseling services, would not only be an added value for the university but would also contribute to the improvement of both individual and collective culture among student groups. The implementation of psychological counseling interventions tailored to the specific needs of each student would transform the university environment, making it more favorable and functional for achieving personal satisfaction and academic success.

Keywords: keywords: service, psychological counseling, motivation, stress, anxiety, academic performance

DIFFERENCES IN SOCIAL SKILLS BETWEEN BOYS AND GIRLS IN TEAM SPORTS: IS GENDER A DETERMINING FACTOR?

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Abstract: Introduction. Team sports involve playing with peers, so young people develop self-confidence, initiative, communication, and cooperation skills. It is important to understand the differences in social skills of athletes in team sports. Research aim: to compare the social skills of team sport athletes by gender and age. Methods. The study was conducted in Lithuania in 2024. The study sample ($n = 331$) was selected using purposive sampling. Inclusion criteria: participants had to be aged 15–18 years and have been involved in a team sport for at least one year. Social skills were assessed using the Social Skills Rating System, Student Form (SSRS-S). Data were collected via an online survey. Mathematical statistical data analysis was performed using SPSS 23.0 software package. The Mann-Whitney U test was used to compare data from two independent samples by gender, and the Kruskal-Wallis criterion was used to compare more than two independent sample groups by age. The overall reliability index, Cronbach's alpha for the Social Skills Scale, was 0.93. Results. The survey results allowed us to determine the differences in social skills of team sports athletes by gender. The statistically significant differences between girls and boys were found in all subscales: girls had better cooperation ($p = 0.000$, effect size -0.204), assertiveness ($p = 0.025$, effect size -0.123), empathy ($p = 0.000$, effect size -0.193), and had better self-control ($p = 0.009$, effect size -0.144) than boys. The results of the study by age showed that statistical differences were found in 3 of the 4 subscales: older athletes (18 years old) demonstrated greater assertion ($p = 0.005$, effect size 0.030), empathy ($p = 0.009$, effect size 0.026), and self-control ($p = 0.017$, effect size 0.022). Statistically significant correlations were also found between age and the following social skills: Very small positive correlations were found between age and assertion ($r = 0.144$), empathy ($r = 0.162$), and self-control ($r = 0.149$). However, the correlations between gender and social skills were not statistically significant ($p > 0.05$). Conclusions. The results revealed that gender is one of the most important factors for the expression of social skills in team sports. Girls had better cooperation, assertion, empathy, and self-control skills. Age was also a significant factor for team sports athletes. Older athletes (18 years old) demonstrated higher levels of assertion, empathy and self-control. It can be stated that social skills improve with age in team sport athletes aged 15-18.

Keywords: team sports, social skills, cooperation, assertion, empathy, self-control

PUPIL WELLBEING AND SCHOOL ENGAGEMENT: THE ROLE OF PSYCHOSOCIAL SUPPORT IN PROMOTING ACTIVE AND HEALTHY SCHOOL ENVIRONMENTS

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Abstract: Student wellbeing and engagement are increasingly recognized as key determinants of healthy and active school environments. In the context of Albanian high schools, psychosocial services remain underexplored as systemic contributors to student wellbeing and participation. This study aims to assess students' and teachers' perceptions of psychosocial support and its role in fostering a positive school climate, engagement, and overall wellbeing. A cross-sectional descriptive study was conducted at a public high school in Northern Albania. The sample included 224 students and 31 teachers. Two structured questionnaires, each consisting of 20 Likert-scale items (1–5), were administered to measure perceptions of psychosocial services, school climate, and student wellbeing. The instruments demonstrated high internal consistency (Cronbach's $\alpha = .96$ for students; $\alpha = .93$ for teachers). Data were analyzed using SPSS (version 25), focusing on descriptive statistics and mean comparisons across key dimensions. Findings indicate generally positive perceptions of psychosocial support and its impact on the school environment. Students reported high levels of perceived support and access to psychosocial services ($M = 4.13$), as well as wellbeing and emotional safety ($M = 4.12$). Teachers emphasized improved collaboration and institutional effectiveness linked to psychosocial interventions. However, lower mean scores were observed in areas related to student relationships and sense of belonging ($M = 3.79$), suggesting the need for more targeted interventions. The results highlight the role of psychosocial services in strengthening student engagement and



contributing to a healthier and more active school climate. The findings suggest that psychosocial services can play a transformative role not only at the individual level but also in shaping school culture and promoting wellbeing. By fostering emotional safety, trust, and engagement, these services indirectly support students' participation in school life and active environments. Integrating psychosocial support within broader health and education strategies can enhance both educational outcomes and student wellbeing in line with contemporary school health promotion models.

Keywords: student wellbeing, psychosocial support, school engagement, school climate, health promotion

CIVIC EDUCATION AS A MECHANISM OF SOCIAL DEVELOPMENT. FROM INDIVIDUAL COMPETENCE TO COLLECTIVE COHESION

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Abstract: This paper aims to address the role of civic education as a fundamental mechanism for social development by analysing the transition from the formation of individual competences to the building of collective cohesion. In recent decades, modern societies have faced profound structural, cultural, and political transformations. Globalization, migration, the digital revolution and the crisis of trust in institutions have brought new challenges for social cohesion. In this context, citizenship education has emerged as a priority area of education policies at the national and international level. However, the fundamental question remains that; How can civic education serve as an effective mechanism for social development, going beyond simply the formation of competent individuals towards building collective cohesion? In an era in which we live, characterized by a pluralism of values, political polarization and global challenges, civic education is presented as a strategic tool for cultivating informed, responsible and engaged citizens. The paper argues that the development of civic competences – knowledge, skills, attitudes and values – forms the basis for social cohesion, but that the latter also requires inclusive institutions, public spaces and collective practices. Through a critical review of the mostly international literature and empirical cases, the article proposes an integrative model of citizenship education that connects individual and collective dimensions. The findings show that effective citizenship education requires a multidimensional approach, which combines cognitive learning with practical participation and ethical reflection. Thus, this paper aims to provide an in-depth analysis of this relationship, drawing on contemporary theories of citizenship, social psychology, and sociology of education. The main goal is to explore how individual competencies acquired through citizenship education – such as critical thinking, empathy, recognition of rights and obligations – can be translated into collective practices that strengthen social cohesion, mutual trust, and solidarity.

Keywords: civic education, social development, civic competences, collective cohesion, participatory democracy, social capital

THE IMPORTANCE OF PHYSICAL ACTIVITY IN THE PSYCHOSOCIAL DEVELOPMENT OF STUDENTS

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Abstract: Abstract In recent decades, higher education institutions have faced numerous challenges related to the physical and psychological well-being of students. The fast pace of academic life, performance pressure, and changes in lifestyle have contributed to increased levels of stress, anxiety, and other psychosocial problems among university students. In this context, physical activity is considered an important factor in promoting student health and well-being, contributing not only to the improvement of physical health but also to their emotional, social, and psychological development. Studies in public health, psychology, and sports sociology indicate that participation in physical and sports activities positively affects the development of social skills, the building of interpersonal relationships, and the overall well-being of individuals. The aim of this study is to analyze the importance of physical activity in the psychosocial development of students, highlighting its impact on emotional well-being, the reduction of academic stress, and the improvement of social interactions within the university community. The study also seeks to emphasize the role of physical activities in promoting a healthy lifestyle and strengthening the social and emotional capacities of students in higher education institutions. The study methodology is based on an analysis of international scientific literature in the fields of public health, developmental psychology, and sports sociology. Through an analytical and synthetic approach, empirical studies and academic research examining the relationship between physical activity and indicators of students'



psychosocial development were reviewed. The results of the analysis show that regular engagement in physical and sports activities significantly contributes to improving students' psychological well-being. Physical activity helps reduce stress, anxiety, and depressive symptoms, while increasing self-confidence, self-esteem, and personal motivation. Furthermore, participation in sports activities creates opportunities for social interaction, cooperation, and the development of communication skills, positively affecting students' social integration and fostering a more supportive and inclusive environment in university institutions. The study's conclusions emphasize that physical activity constitutes a crucial component in promoting the psychosocial development of students and improving the quality of academic life. Integrating structured physical activity programs into universities, alongside the promotion of policies that support an active lifestyle, can significantly contribute to creating a healthier, more productive, and sustainable university environment for student development.

Keywords: physical activity, psychosocial development, students, psychological well-being, sports activity

THE IMPACT OF SPORT ON BUILDING RELATIONSHIPS AND DEVELOPING SOCIAL SKILLS IN THE 10-15 YEAR OLD AGE GROUP

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Abstract: Abstract Adolescence represents a critical stage of psychosocial development, during which individuals face multiple challenges related to identity formation and the establishment of interpersonal relationships. In this context, sports activities emerge not only as a means of physical development but also as a dynamic social environment that can be conceptualized as a “social laboratory” for experimenting with and shaping social roles. The aim of this study is to examine the impact of participation in sports activities on identity construction and the development of interpersonal relationships among adolescents aged 10–15 within the school setting. The study seeks to highlight how interactions on the sports field contribute to the development of self-confidence, a sense of belonging, and key social skills such as cooperation, communication, and conflict management. A mixed-methods approach was employed, combining both quantitative and qualitative techniques. Data were collected through structured questionnaires administered to students, interviews with teachers and school social workers, and direct observations during school-based sports activities. The sample consists of lower secondary school students actively engaged in organized sports. Preliminary findings indicate that participation in sports has a positive impact on adolescents' social identity formation, enhancing self-esteem and fostering a stronger sense of group belonging. Furthermore, sports function as an effective mechanism for building positive interpersonal relationships by promoting cooperation, mutual respect, and reducing exclusionary behaviors. Additionally, the sports field provides a safe environment for coping with challenges and managing emotions. In conclusion, the study emphasizes the importance of integrating sports activities as part of psychosocial interventions in schools, considering sport as a valuable tool for supporting the social and emotional development of adolescents. The role of school professionals, particularly that of the social worker, is crucial in guiding and maximizing these benefits. **Keywords:** Adolescence; sports participation; social skills; identity formation; interpersonal relationships; psychosocial development; school social work

THE ROLE OF SOCIAL PROTECTION SERVICES IN ENHANCING WELL-BEING AND FUNCTIONAL CAPACITY: INSIGHTS FROM PUBLIC ADMINISTRATION PRACTICE

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Abstract: Objective: This study aims to examine the role of social insurance services in enhancing individual well-being and functional capacity, conceptualizing well-being as a complex interaction between socio-economic, psychological, and institutional factors. Within this framework, the institutional dimension is emphasized as a key determinant influencing quality of life and individuals' ability to maintain active and productive functioning in society. Methods: The study adopts a qualitative approach grounded in professional experience within the Regional Directorate of Social Insurance, under the Social Insurance Institute of Albania. Data are derived from the observation of daily administrative processes, the management of short-term benefit claims, and direct interactions with citizens seeking services. The analysis focuses on identifying key factors that influence access to services, administrative efficiency, transparency, and the quality of institutional communication. Particular attention is given to citizens' subjective perceptions of security, support, and trust in the system. Results: Findings indicate that procedural delays, bureaucratic complexity, and lack of clear information contribute to increased stress and uncertainty among individuals, negatively affecting their psychological well-being and their capacity to function effectively in social and professional domains. In many cases, these barriers reduce trust in public



institutions and create a perceived distance between citizens and service providers. Conversely, efficient service delivery, transparency, and structured communication are associated with reduced stress levels, enhanced sense of security, and improved emotional and functional stability. These results suggest that social protection services extend beyond their economic function, playing a significant role in supporting overall well-being and everyday functioning. Conclusion: The study highlights the need for a more integrated approach to well-being promotion, where social protection services are recognized as key components in sustaining individuals' functional capacity. Improving administrative processes, increasing transparency, and strengthening institutional communication are essential for enhancing service effectiveness. Integrating the institutional dimension into health and well-being research broadens the understanding of these concepts beyond the physical domain, emphasizing the importance of social stability, access to services, and continuous support for active participation in society.

Keywords: well-being; social protection; functional capacity; public administration; quality of life; institutional communication; access to services; social insurance

FINANCIAL BURDEN ON FAMILIES FOR CHILDREN'S PARTICIPATION IN YOUTH FOOTBALL IN THE SHKODRA REGION IN 2025

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Abstract: Youth football is commonly perceived as a form of recreation and a means of promoting children's physical, psychological, and social development. However, its economic implications for families remain less explored. This study aims to analyze the financial burden on families associated with children's participation in organized football activities in the Shkodra region of Albania during 2025. The study focuses on youth football within the regional structure defined by the Albanian Football Association, which divides youth competitions into eight regional zones. The Shkodra zone includes the municipalities of Shkodër, Pukë, Malësi e Madhe, Fushë-Arrëz, and Vau i Dejës. A descriptive research design was employed. Data were collected from multiple stakeholders, including academy directors, team coaches, and parents. The sample consisted of 102 teams ($n = 102$), comprising children aged 7–19 years who participated in official competitions organized during the 2025 season. The analysis identified several key cost components borne by families, including monthly training fees, coaching staff payments, training field rental, transportation for training sessions, pre-season medical examinations, match-related travel, and match field expenses. The findings highlight that participation in youth football represents a significant and multifaceted financial commitment for families. This economic burden may influence accessibility and long-term participation, raising important considerations for policy development and support mechanisms in youth sports.

Keywords: Youth, Finance, Football, Expenses

EFFECTS OF STRENGTH TRAINING WITH AND WITHOUT BALL ON AGILITY PERFORMANCE IN YOUNG BASKETBALL PLAYERS: AN INTERVENTION STUDY

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Abstract: This study aimed to examine the effects of two distinct strength training models—general strength training without a ball (NB) and basketball-specific training with a ball (WB)—on agility performance in young basketball players. Fifty-nine male athletes (mean age 16.1 ± 1.0 years) were assigned to three groups: NB ($n = 23$), WB ($n = 19$), and control ($n = 17$). Both intervention groups followed a structured 12-week training program (circuit training using strength and conditioning drills-15 min duration; using seven drills x 3 times per week; in total, 12 weeks). while the control group continued standard basketball training. Agility was assessed using the 10x5 m shuttle run and T-test before and after the intervention. Results showed significant improvements in both intervention groups, with the NB group demonstrating greater gains (10x5 m: -0.99 s; T-test: -0.57 s) compared to the WB group (10x5 m: -0.54 s; T-test: -0.12 s), while the control group showed no improvement. ANOVA revealed significant differences between groups ($p = 0.001$), and post-hoc analysis confirmed that the NB group significantly outperformed the control group. These findings indicate that both general and sport-specific strength training improve agility performance, with general strength training producing slightly greater effects. The results highlight the importance of neuromuscular adaptations in youth athlete development.

Keywords: basketball, strength, agility, youth



AGE AND GENDER RELATED TRENDS IN PHYSICAL ACTIVITY AMONG SCHOOL AGED CHILDREN IN TIRANA, ALBANIA: EVIDENCE FROM TREND ANALYSIS AND POLICY DEVELOPMENT FOR CHILD WELL-BEING (2015-2025) STUDY

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Abstract: Background: Physical activity (PA) in youth is known to decline with age and differ by gender, yet limited evidence exists from Southeast European contexts such as Albania. Purpose: This study aimed to examine age-related trends and gender differences in physical activity among school-aged children and adolescents in Tirana using a PAQ-C–based questionnaire. Methods: A cross-sectional study was conducted with 1,250 participants from elementary (6.1–11.5 years; $n = 356$), middle (11.6–16.5 years; $n = 461$), and high school (16.6–18.6 years; $n = 433$). Physical activity was assessed using a validated PAQ-C–based instrument capturing moderate-to-vigorous physical activity over the previous 7 days. Scores ranged from 1 (low) to 5 (high). Descriptive statistics were computed, and comparisons were made across age groups and gender. Results: A clear declining trend in physical activity was observed across age groups, with mean scores decreasing from elementary ($M = 2.77$) to middle ($M = 2.64$) and high school ($M = 2.32$). Gender differences were evident across all levels, with boys consistently reporting higher PA than girls. The gender gap was more pronounced during adolescence, particularly in middle school (boys: $M = 2.79$; girls: $M = 2.52$). Conclusions: The findings reveal a significant age-related decline in physical activity and persistent gender disparities among youth in Tirana. These trends highlight the need for age- and gender-sensitive interventions to promote physical activity, especially during adolescence and among girls.

Keywords: physical activity, PAQ-C, age trends, gender differences, adolescents, Albania

FREQUENCY OF BREAKFAST CONSUMPTION AMONG SCHOOL CHILDREN IN TIRANA, ALBANIA: A CROSS-SECTIONAL STUDY BY GENDER

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Abstract: Background: Regular breakfast consumption is an important determinant of children’s health, cognitive performance, and overall well-being. However, skipping breakfast remains a common behavior among school-aged populations. Purpose: This study aimed to examine the frequency of breakfast consumption among school children in Tirana, Albania, with a focus on overall patterns and gender differences. Methods: A cross-sectional study was conducted including 1,243 valid participants (7 missing responses). Breakfast consumption frequency before school was assessed using a structured questionnaire with five categories ranging from “every day” to “1–2 times per month.” Descriptive statistics were calculated, and distributions were analyzed overall and by gender. Results: Overall, 46.9% ($n = 583$) of participants reported consuming breakfast every day. A smaller proportion reported breakfast consumption 5–6 times per week (9.7%, $n = 121$) and 3–4 times per week (9.6%, $n = 120$). Notably, 15.4% ($n = 192$) reported eating breakfast only 1–2 times per week, while 18.3% ($n = 227$) consumed breakfast as infrequently as 1–2 times per month. Gender-specific analysis showed similar patterns, with 278 boys and 305 girls reporting daily breakfast consumption. However, a relatively higher number of girls reported lower-frequency breakfast consumption (e.g., 1–2 times per month: girls $n = 135$; boys $n = 92$), indicating a tendency toward less regular breakfast habits among girls. Conclusions: While nearly half of the participants reported daily breakfast consumption, a substantial proportion of children exhibited irregular or infrequent breakfast habits. Gender differences suggest that girls may be at higher risk of skipping breakfast. These findings highlight the need for targeted nutritional interventions promoting regular breakfast consumption among school-aged children in Tirana.

Keywords: breakfast consumption, children, adolescents, nutrition, gender differences, Albania



PHYSICAL ACTIVITY LEVELS AMONG SCHOOL CHILDREN AND ADOLESCENTS IN TIRANA, ALBANIA: A CROSS-SECTIONAL STUDY USING THE PAQ-C MODEL

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Abstract: Background: Physical activity (PA) during childhood and adolescence is essential for health and development, yet global evidence suggests a decline in activity levels with age and differences by gender. Purpose: This study aimed to assess PA levels among school children and adolescents in Tirana, Albania, using the Physical Activity Questionnaire for Children (PAQ-C) model, and to examine differences by school level and gender. Methods: A cross-sectional design was employed, including 1,250 participants from elementary (6.1–11.5 years; n = 356), middle (11.6–16.5 years; n = 461), and high school (16.6–18.6 years; n = 433). PA levels were measured using a PAQ-C–based questionnaire assessing moderate-to-vigorous physical activity over the previous 7 days. Scores ranged from 1 (low activity) to 5 (high activity). Descriptive statistics were calculated using SPSS. Results: Mean PA scores decreased progressively across school levels: elementary (M = 2.77), middle (M = 2.64), and high school (M = 2.32). Boys reported higher PA levels than girls in all groups: elementary (boys: M = 2.80; girls: M = 2.73), middle (boys: M = 2.79; girls: M = 2.52), and high school (boys: M = 2.43; girls: M = 2.25). Conclusions: PA levels among children and adolescents in Tirana are moderate but show a clear decline with increasing age and are consistently lower among girls. These findings highlight the need for targeted interventions to promote physical activity, particularly among adolescents and female students.

Keywords: physical activity, PAQ-C, children, adolescents, gender differences, school level, Albania

PREVALENCE OF SELF REPORTED MUSCULOSKELETAL PAIN AMONG SCHOOL CHILDREN AGED 9-16 YEARS DURING SCHOOL SCREENING PROGRAMS

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Abstract: Background: Musculoskeletal discomfort and spinal health issues among school-age children have become an increasing concern due to sedentary lifestyles, prolonged sitting, and inadequate postural habits. Early identification through school-based screening programs is essential for preventing long-term health consequences. Objective: The aim of this study was to determine the prevalence and characteristics of self-reported musculoskeletal pain among children aged 9–16 years during school screening programs. Methods: A cross-sectional study was conducted involving 431 students (235 females, 196 males) aged 9–16 years. Participants underwent school-based screening assessments and were asked to report the presence of pain or discomfort. Pain intensity was evaluated using the Visual Analog Scale (VAS) ranging from 1 to 10. Descriptive statistics were used to summarize demographic data and pain characteristics. Results: A total of 21.3% (n = 92) of students reported experiencing occasional pain or discomfort, while 78.7% (n = 339) reported no symptoms. Among those reporting pain, the majority experienced occasional discomfort (67.5%), followed by mild pain (26%) with intensity up to 4/10 on the VAS scale, and a smaller proportion reported moderate pain (6.5%) with intensity around 6/10. No cases of severe pain were identified. These findings indicate that while most children are asymptomatic, a considerable proportion experience intermittent musculoskeletal complaints. Conclusion: The results highlight that a notable percentage of school-age children experience mild to moderate musculoskeletal discomfort. School-based screening programs play a crucial role in early detection and provide an important opportunity for implementing preventive strategies aimed at improving spinal health and overall well-being in youth populations.

Keywords: school screening, musculoskeletal pain, spinal health, adolescents, VAS scale, posture

RELATIONSHIPS BETWEEN ANTHROPOMETRIC CHARACTERISTICS AND SPEED-AGILITY PERFORMANCE IN U14 BASKETBALL PLAYERS

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Abstract: The aim of this study was to examine the relationships between anthropometric characteristics and performance variables, specifically speed and agility, in U14 basketball players. A total of 42 male athletes



participated in this cross-sectional study. Anthropometric measurements included body weight, body height, body mass index (BMI), and waist circumference, while performance was assessed using a 20 m sprint test, T-test, and 10×5 m agility test. Descriptive statistics and Pearson correlation analyses were conducted to explore associations between variables. The results indicated significant positive correlations between BMI and performance times in the sprint ($r = .383, p < .05$) and agility tests ($r = .450-.475, p < .01$), suggesting that higher BMI is associated with lower performance. Waist circumference was also significantly correlated with agility performance ($r = .433-.447, p < .01$), indicating a negative influence of central adiposity on change-of-direction ability. Body weight showed a weaker association, being significantly related only to the 10×5 m test ($r = .335, p < .05$), while body height was not significantly associated with any performance variable. In conclusion, body composition indicators, particularly BMI and waist circumference, play an important role in determining speed and agility performance in U14 basketball players. These findings highlight the importance of monitoring anthropometric characteristics as part of youth athlete development and training optimization.

Keywords: youth basketball, anthropometry, BMI, agility, sprint performance, body composition, adolescence

COMPARATIVE ANALYSIS OF PARENTAL SPORTS PARTICIPATION AND YOUTH SPORTS ENGAGEMENT IN ALBANIA

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Abstract: This study examines the relationship between parental sports participation and youth involvement in organized sports in Albania, using data derived from the START – SporT Assesment ReporT project. A total of 716 youth athletes (aged 8–19 years) were analyzed, providing information on their current sport discipline as well as the historical sports participation of their mothers and fathers. The findings reveal clear intergenerational and gender-specific patterns in sport engagement. Results indicate that fathers' participation is strongly associated with boys' involvement in football (81.8%) and basketball (40.3%), highlighting the dominant role of paternal influence in traditionally male-oriented sports. Similarly, fathers' influence extends to girls, with 83.3% of girls in football having fathers with a football background, suggesting strong cross-gender transmission in this discipline. In contrast, mothers' participation shows a stronger association with volleyball, where 60.0% of girls and 54.5% of boys in related groups report maternal involvement, indicating that volleyball functions as a maternally influenced sport across genders. Additional findings reveal nuanced intergenerational dynamics, including cross-gender influences such as mothers' contribution to boys' participation in volleyball (66.7%) and fathers' influence on girls in basketball and taekwondo-related contexts. In contrast, participation in non-traditional sports (e.g., swimming, tennis, badminton) appears less dependent on parental background, suggesting a greater role of individual preference or access to opportunities. Overall, the results reflect strong cultural and gendered patterns in Albanian sport, where football and basketball are predominantly associated with paternal influence, while volleyball and similar disciplines are more closely linked to maternal legacy. These findings highlight the importance of family background in shaping youth sport participation and underline the need for policies that promote broader, more inclusive engagement across all sports disciplines.

Keywords: youth sport participation, parental influence, intergenerational transmission, gender differences, Albania, START project

PARENTAL INVOLVEMENT IN YOUTH SPORTS: A SURVEY OF 716 ATHLETES IN ALBANIA SCIENTIFIC

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Abstract: This study examines the relationship between parents' prior involvement in sports and their children's current participation across four disciplines in Albania: basketball, football, volleyball, and taekwondo. A survey of 716 youth athletes (aged 8–19 years) was conducted, including representation of athlete's boys and girls. The results reveal significant differences in parental involvement by gender and sport. General overview of parental participation in youth sports for fathers' participation show: boys: Fathers are significantly more involved in boys' sports across all disciplines. Their influence is most pronounced in basketball (31.3%) and football (27.3%), highlighting their active encouragement in popular team sports. Even in less common sports like Taekwondo, fathers' involvement remains notable at 33.3%. girls: Fathers also play a key role in encouraging girls' participation, with the highest rates in football (38.7%) and basketball (25%). However, their involvement slightly tapers off in other sports like volleyball (21.5%) and taekwondo (20%). General overview of parental participation



in youth sports for mothers' participation show: boys: Mothers show comparatively low involvement in boys' sports, with the highest participation in basketball (15.6%) and volleyball (12.5%). Their presence in other sports, such as football (2.5 %) and taekwondo (0%), is minimal or nonexistent. Girls: Maternal involvement in girls' sports is also limited, with the highest levels reported in volleyball (9.5%) and football (6.5%). However, there is no reported participation from mothers in basketball or taekwondo for girls. Among boys, 31.3% reported that their fathers had participated in basketball during their youth, correlating with higher youth engagement in the sport, while football followed closely at 27.3%. Similarly, girls whose fathers had played football (38.7%) or volleyball (21.5%) demonstrated greater participation in these disciplines. Mothers' involvement was less pronounced; for boys, 15.6% of basketball players and 12.5% of volleyball players had mothers who participated in sports, while for girls, the highest maternal influence was seen in volleyball (9.5%) and football (6.5%). Gender disparities were evident, with boys reporting higher overall parental sports involvement compared to girls. For example, no mothers of girls in basketball were reported to have participated in sports, while 25% of fathers of these athletes had done so. Additionally, sports like taekwondo showed minimal parental involvement, with only 33.3% of boys and 20% of girls having fathers who participated. These results underscore the influence of fathers, particularly in male-dominated sports, and highlight the need to increase maternal involvement to bridge the gender gap in youth sports participation. The findings emphasize the importance of targeted interventions to encourage balanced parental support, fostering equitable opportunities for young athletes.

Keywords: sports, parental, participation, football, basketball

GENDER COMPARISON OF ANTHROPOMETRIC AND STRENGTH PARAMETERS IN PRESCHOOL CHILDREN (3–5 YEARS OLD)

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Abstract: The aim of this study was to analyze anthropometric and strength parameters in preschool children (3–5 years old) and to evaluate gender differences. The study included over 120 children enrolled in preschool institutions, who were assessed through measurements of body height and body weight, as well as tests of upper and lower limb strength. This study was conducted within the framework of the international SUNRISE project (International Surveillance Study of Movement Behaviours in the Early Years) in Albania, led by the University “Aleksandër Xhuvani” of Elbasan in partnership with the Albanian Sport Science Association (ASSA), and funded by the National Agency for Scientific Research and Innovation (AKKSHI) under the Research and Development Programme (PKKZH), with the aim of developing a national database and supporting policies related to children’s health and physical activity. Upper limb strength was measured using a handgrip dynamometer for each hand, while lower limb strength was assessed using the standing long jump test. The results showed that boys generally presented higher mean values compared to girls in most strength indicators, particularly in the standing long jump, where a statistically significant difference was found. In contrast, no statistically significant gender differences were observed for anthropometric parameters such as body height and body weight. Effect size analysis confirmed that gender differences were small for most variables, except for lower limb strength, where a large effect was identified. In conclusion, the study indicates that gender differences in anthropometric parameters during preschool age are limited, while more pronounced differences appear in motor strength indicators. These findings highlight the importance of balanced motor skill development from an early age.

Keywords: Anthropometric parameters, muscle strength, preschool children, gender comparison, standing long jump



GENDER COMPARISON OF BALANCE, UPPER LIMB COORDINATION, AND AGILITY IN PRESCHOOL CHILDREN (3–5 YEARS OLD)

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Abstract: The aim of this study was to analyze balance, upper limb coordination, and agility in preschool children (3–5 years old) and to evaluate gender differences. The study included over 100 children enrolled in preschool institutions. Motor abilities were assessed using standardized tests. Agility and functional mobility were measured using the Supine-to-Stand Timed Up and Go (S-TUG) test, which requires a combination of static and dynamic balance when transitioning from a supine position to standing and performing subsequent movement. Upper limb coordination and fine motor manipulation were assessed using the NIH Toolbox 9-Hole Pegboard test, which evaluates the speed and accuracy of hand movements. Balance was assessed using the one-leg standing test. This study was conducted within the framework of the SUNRISE Study in Albania, led by the University “Aleksandër Xhuvani” of Elbasan in partnership with the Albanian Sport Science Association (ASSA), and funded by the National Agency for Scientific Research and Innovation (AKKSHI) under the Research and Development Programme (PKKZH). The results showed that gender differences were generally small and not statistically significant for most of the analyzed variables. Boys demonstrated a tendency toward better performance in some balance and coordination indicators, while girls showed more stable results in certain measures. However, these differences did not reach statistical significance. Effect size analysis confirmed that practical differences between genders were limited. In conclusion, the study indicates that during preschool age, the development of motor abilities such as balance, coordination, and agility is similar between boys and girls. These findings highlight the importance of providing equal opportunities for motor development and physical activity from an early age.

Keywords: balance, upper limb coordination, agility, motor development, preschool children

INTERGENERATIONAL TRENDS IN SPORTS DISCIPLINE PARTICIPATION: A STUDY OF YOUTH ATHLETES, THEIR PARENTS, AND GRANDPARENTS IN ALBANIA

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Abstract: This study (START project) examines intergenerational trends in sports participation, comparing the percentage of involvement in various sports disciplines among mothers, fathers, maternal grandmothers, maternal grandfathers, paternal grandmothers, and paternal grandfathers of youth athletes in Albania. The aim is to identify patterns and shifts in sports engagement across generations, as well as gender-based differences in participation. The study sample consisted of 716 youth athletes (514 boys, 202 girls) aged 8-19 years, actively involved in organized sports programs. Data were collected through a questionnaire assessing family sports history. Results showed that boys predominantly participated in football (54.9%) and basketball (38.7%), while girls heavily favored volleyball (78.2%). Volleyball was the leading sport among mothers (49.2%) and maternal grandmothers (40.0%), indicating continuity across female generations. Football dominated among fathers (59.8%) and maternal grandfathers (68.2%), showing sustained popularity among males. Basketball was highly favored by paternal grandmothers (80.0%) and grandfathers (73.8%), reflecting historical preferences. A decline in diversity of sports disciplines was observed from older to younger generations, with less representation in sports like wrestling, boxing, and athletics. These findings highlight intergenerational trends, gender influences, and shifts in sports preferences, offering actionable insights for promoting a diverse and inclusive sporting culture in Albania.

Keywords: Generational trends, sports participation, youth athletes, gender differences, Albania, intergenerational analysis.



AEROBIC FITNESS PROFILES IN YOUTH SOCCER PLAYERS: A COMPARATIVE ANALYSIS WITH OTHER SPORTS DISCIPLINES

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Abstract: Aerobic fitness is a key determinant of performance in youth sports, particularly in soccer, where players are required to sustain repeated high-intensity efforts over extended periods. The aim of this study was to analyze aerobic fitness profiles in youth soccer players and compare them with athletes from other sports disciplines, including basketball, volleyball, and martial arts (taekwondo/karate)- data part of START project implemented by ASSA association. A total of over 400 youth athletes aged 10–17 years participated in the study. Aerobic performance was assessed using the 20 m Shuttle Run Test (Beep Test), a validated field-based measure of aerobic capacity and an indirect estimator of maximal oxygen uptake (VO_{2max}). Performance was expressed as the number of completed laps. Descriptive statistics (mean \pm standard deviation) were calculated across age groups, gender, and sport disciplines, and comparative analyses were conducted to identify developmental trends and sport-specific differences. The results showed that aerobic performance increased progressively with age across all sports. Soccer players demonstrated the highest aerobic performance among males, particularly from early adolescence onward, with a clear increase in the gender gap favoring boys. In contrast, volleyball athletes, especially females, exhibited the highest aerobic scores among girls, while martial arts athletes showed relatively balanced performance between genders. Basketball players demonstrated moderate and consistent aerobic development with smaller gender differences. These findings highlight the sport-specific nature of aerobic development in youth athletes and emphasize the importance of tailored conditioning programs. Soccer, in particular, requires high levels of aerobic endurance, suggesting the need for structured, age-appropriate training strategies. The study contributes to the development of normative data and provides practical implications for coaches, trainers, and sport scientists working in youth athletic development.

Keywords: fitness, soccer, youth athletes, 20 m Shuttle Run Test, sport comparison, endurance development

ANTHROPOMETRIC TRENDS AND GENDER DIFFERENCES IN EARLY CHILDHOOD: EVIDENCE FROM THE SUNRISE STUDY ALBANIA (2023–2026)

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Abstract: This study aimed to examine gender differences in anthropometric characteristics among preschool children aged 3–5 years in Albania, using data collected within the framework of the SUNRISE Study (International Surveillance Study of Movement Behaviours in the Early Years). A comparative cross-sectional design was employed, analyzing data from two measurement periods (2023 and 2026). Anthropometric variables included body height, body weight, and waist circumference. This study was conducted within the SUNRISE Study in Albania, led by the “Aleksandër Xhuvani” University of Elbasan in partnership with ASSA and funded by AKKSHI (PKKZH), contributing to the development of a national database and evidence-based policy on early childhood health and movement behaviors. Descriptive statistics were calculated by gender and year, and independent samples t-tests were conducted to examine gender differences. Effect sizes were estimated using Cohen’s d, Hedges’ correction, and Glass’s delta. The results indicated that boys consistently presented slightly higher mean values across most anthropometric variables; however, these differences were not statistically significant in either year ($p > .05$). Effect size analysis confirmed that gender differences were small or negligible. A comparison across years revealed an increase in mean body weight in 2026, while waist circumference remained relatively stable. Body height data for 2026 showed high variability, suggesting potential measurement or data entry inconsistencies that should be interpreted with caution. In conclusion, the findings suggest that gender does not significantly influence anthropometric characteristics in early childhood within the Albanian context. This study contributes to the national database established through the SUNRISE Study project and provides evidence to support future research and policy development related to child health and movement behaviors.

Keywords: SUNRISE study, Early childhood, Anthropometric characteristics, gender



DEVELOPMENT OF STRENGTH AND BALANCE IN PRESCHOOL CHILDREN: A SUNRISE-BASED LONGITUDINAL COMPARISON IN ALBANIA

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Abstract: This study aimed to examine changes in strength and balance performance among preschool children aged 3–5 years in Albania, using data collected within the framework of the SUNRISE Study (International Surveillance Study of Movement Behaviours in the Early Years). A comparative cross-sectional design was employed, analyzing data from two measurement periods (2023 and 2026). This study was conducted within the framework of the SUNRISE Study in Albania, led by the “Aleksandër Xhuvani” University of Elbasan in partnership with the Albanian Sport Science Association (ASSA), and funded by the National Agency for Scientific Research and Innovation (AKKSHI) under the Research and Development Programme (PKKZH), aiming to contribute to the development of a national database and evidence-based policy for early childhood health and movement behaviors. Motor fitness was assessed using handgrip strength (right and left hand) and balance performance through a one-leg standing test. Descriptive statistics were calculated for all variables, and independent samples t-tests were used to examine differences between years. The results showed significant improvements in right-hand grip strength and right-leg balance performance in 2026 compared to 2023 ($p < .001$). In contrast, left-hand grip strength was significantly higher in 2023, indicating a decrease over time ($p < .001$). No statistically significant differences were observed for left-leg balance ($p > .05$), despite large differences in mean values. The findings suggest partial improvements in motor fitness over time, particularly in dominant-side performance, while inconsistencies in left-side measures may reflect variability in motor development or measurement-related factors. Additionally, high variability observed in left-leg balance in 2026 indicates the presence of extreme values that should be interpreted with caution. In conclusion, this study contributes to understanding motor development trends in early childhood within the Albanian context and supports the objectives of the SUNRISE Study project in generating evidence for child health and physical activity policy development.

Keywords: SUNRISE study, early childhood, motor development, handgrip strength

THE FUNCTION AND ROLE OF INTERNATIONAL SPORTS LAW IN ALBANIAN LEGISLATION (STATISTICAL AND COMPARATIVE ANALYSIS OF LEGISLATION)

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Abstract: Sport constitutes an important sector of social, economic and cultural development in the Western Balkan countries. In recent decades, the countries of the region have undertaken important reforms to harmonize sports legislation with international standards, especially those of the European Union and the Council of Europe, with the aim of formalizing sports as part of an important dimension in decision-making. The implementation of sports legislation is directly linked to the functioning of sports federations, financial transparency, the development of mass and professional sports, as well as the resolution of sports disputes, or sports-legal mediation. In Albania, the main legal basis is Law no. 79/2017 “On Sport”, which regulates the organization of sports activities, sponsorship and the functioning of sports organizations in accordance with international standards, but also the Euro-Atlantic framework.

Keywords: Legislation, sports mediation, regional bodies and sports formalization; internationalization of sports.

BODY MASS INDEX AND THE IMPACT OF RISK FACTORS IN OBSTRUCTIVE SLEEP APNEA: IMPLICATIONS FOR HEALTH AND PERFORMANCE

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Abstract: Obstructive Sleep Apnea Syndrome (OSAS) is a multifactorial pathological condition that has an important impact on cardiometabolic well-being and everyday performance. Although risk factors such as obesity are well recognized, the relative significance of other factors such as sleep architecture, nocturnal hypoxia and other related lifestyle factors remain incompletely characterized. Polysomnography data of 36 individuals were examined, of which 32 adult patients (91.7% male, mean age 41.3 years). Parameters like demographics, Apnea-Hypopnea Index (AHI), Body Mass Index (BMI), Sleep Architecture (REM% and N3 Sleep%), Nocturnal Hypoxia and Lifestyle Factors (smoking, alcohol consumption) were taken into consideration. The subjects were stratified into three categories based on BMI index in normal, overweight, and obese and the corresponding AHI index per group. It was evidenced an important positive correlation between AHI and BMI and a strong negative correlation with minimal nocturnal oxygen saturation. Obese subjects (BMI>30) represented a significantly higher median AHI and a lower minimal oxygen saturation rate in comparison with overweight and normal groups. Severe OSAS was present in 76.92% of obese individuals in contrast to 33% of the overweight and 20% of normal BMI, a group that however suggests further anatomical evaluations. Severe hypoxia (SpO₂ <70%) was detected mostly in obese (62.5%) and overweight (28.6%) subjects. Although minimal SpO₂, showed the most notable correlation with AHI, it suggests a marker of the disease severity rather than a casual factor. No important associations were recognized between OSAS severity and REM sleep, N3 sleep and smoking. While alcohol consumption has been associated with a higher risk of OSAS, its relationship with disease severity remains not significant. BMI and nocturnal hypoxia seem to be the major predictors of OSAS severity with an evident gradient across BMI categories. While hypoxemia is a consequence of OSAS, its size suggests a contribution to overall disease burden. Nocturnal hypoxemia may reduce aerobic efficiency and increase cardiovascular load and have expected consequences in physical performance. Focused interventions in weight management and medical treatments to improve hypoxemia remain essential in reducing OSAS-related health risks.

Keywords: OSAS, obesity, hypoxemia, AHI, health promotion

NORMATIVE DATA FOR MOTOR FIELD TESTS IN ATHLETES FROM DIVERSE SPORT DISCIPLINES IN ALBANIA: INSIGHTS FROM THE START PROJECT

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Abstract: Introduction The lack of standardized athlete performance data has limited evidence-based sport development in Albania. To address this, the Albanian Sports Science Association (ASSA) initiated systematic data collection in 2017, which evolved into the START – SporT Assessment Report project (2021–2024), aiming to build a national athlete performance database. Aim This study presents the structure and participation characteristics of the START dataset and its potential for developing normative reference values. Methods A total of 1,499 athletes (1,065 boys; 434 girls), aged 7–21 years, were assessed across football, basketball, volleyball, and taekwondo/karate. Standardized anthropometric and bio-motor tests were applied within a longitudinal framework. Descriptive statistics were used to analyze participation by gender, sport, and age. Results Team sports dominate the dataset, with football (36.8%) and basketball (34.4%) comprising 71.2% of participants. Volleyball accounts for 24.3%, while combat sports represent 4.4%. Boys mainly participate in basketball (46.7%) and football (43.8%), whereas girls are concentrated in volleyball (75.3%). Peak participation occurs between ages 13–16. Uneven representation, particularly in female basketball and combat sports, may limit generalizability. Conclusions The START project provides the first standardized national dataset for athlete profiling in Albania. It offers a strong foundation for developing normative values, supporting talent identification, training optimization, and evidence-based sport policy. Despite distribution limitations, it represents a scalable model for sport science development in emerging contexts.

Keywords: athlete profiling, normative data, longitudinal assessment, youth sport, Albania, talent identification

THE ROLE OF MUSICAL RHYTHM IN THE MOTOR AND COGNITIVE DEVELOPMENT OF CHILDREN FROM PRESCHOOL TO LOWER SECONDARY EDUCATION

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Abstract: Musical rhythm represents a fundamental component in the interaction between auditory perception and motor response, directly influencing the psycho-physical and cognitive development of children. This study aims to analyze the role of musical rhythm in the motor and cognitive development of children across different educational levels, from preschool to lower secondary education. The study is based on a combined methodological approach, including the analysis of contemporary literature, structured observation in teaching

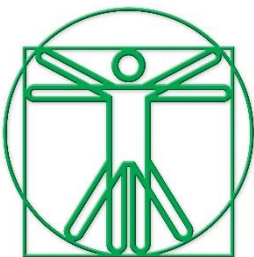


practice, and the professional experience of the author. The sample involved in the study consists of children and students of different age groups engaged in integrated musical and physical activities, with a focus on rhythmic exercises and coordinated movements. The findings indicate that the use of musical rhythm in the teaching process positively affects the development of motor coordination, improves spatial orientation, and enhances concentration. Furthermore, a significant impact is observed in the development of cognitive processes such as memory, attention, and information processing, particularly in the early stages of education. The novelty of this study lies in the integrated approach to music and physical education within a continuous developmental framework across educational levels, offering a practical model for implementation in the school curriculum. In conclusion, the study recommends the systematic integration of rhythmic activities in teaching as an effective strategy for the holistic development of children and for improving the quality of the educational process.

Keywords: musical rhythm, motor development, cognitive development, music education, physical education, interdisciplinarity



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