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OC01 - WOMEN ELITE ITALIAN FOOTBALL PLAYERS' PERCEPTIONS ON GENDER EQUALITY AND DUAL CAREER OPPORTUNITIES

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Purpose: Gender equality and quality education represent key priorities in pursuing strategic objectives of sustainable development (United Nations, 2015). However, gender discrimination and dual career (e.g., the combination of sport and educational demands in elite sportspersons) issues permeate several sporting contexts (European Commission, 2022; IOC, 2023). In considering that a considerable gender gap in football still persists, the present study aimed to investigate women elite Italian football players' perceptions regarding their dual career experiences, in light of potential gender inequalities that might have affected their sporting and academic career paths.

Methods: A 25-items semi-structured electronic questionnaire was administered to 22 Italian women elite Italian football players. Qualitative analysis and descriptive statistics have been applied.

Results: Respondents (age: 25.8 ± 4.3 years) highlighted difficulties in combining sport and education (e.g., lack of time, lack of dual career opportunities), and a higher support received from the sporting context (e.g., training absences and schedule adaptation) rather than from academic institutions (e.g., lack of flexibility for missing classes and exams). Few participants only reported a formal recognition of the student-athlete status and the access to a dual career programme, mainly due to gender differences in the recognition of eligible competitive levels to be considered a "student-athlete". The gender pay gap in professional football was also perceived as a crucial factor in determining women's major interest in academics. Indeed, the football career was perceived as not ensuring a safe future, determining career choices and trajectories negatively influencing participants' athletic performance development.

Conclusions: The present findings reflect previous literature in this field, with the football sporting career perceived as unsecure and of short-term nature both in contract length and career duration (Roderick, 2006; Culvin, 2020), even more for women in a male-dominated industry. Although participants reported that the recent professional

recognition and gender equality policies ameliorated their football and dual career conditions, the present study highlighted the need to further investigate gender and dual career intersecting inequalities in football.

OC02 - EFFECTS OF REPEATED MENTAL FATIGUE ON TRAINING VOLUME AND HYPERTROPHY FOLLOWING A 12-WEEK RESISTANCE TRAINING PROTOCOL IN UNTRAINED ADULTS: A RANDOMIZED TRIAL

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Purpose: This study aimed to analyze the effects of a 12-week repeated mental fatigue intervention before resistance exercise sessions on training volume and muscle hypertrophy in untrained adults.

Methods: We employed an experimental design with group as the between and time as the within factors. Participants ($n = 34$) attended 45 sessions over fifteen weeks, consisting of three familiarizations (first week), three baselines (second week), 36 resistance exercise sessions (weeks three to fourteen), and three visits post-experiment (week fifteen). Muscle thickness for the rectus femoris and vastus lateralis were measured before (baseline) and after (post-experiment) the 12-week intervention. The number of repetitions for all resistance exercise sessions was quantified. The total number of repetitions was obtained by the sum of all resistance training sessions. The Stroop task was used as experimental manipulation to induce mental fatigue. The subjective rating of mental fatigue was assessed using the 100 mm VAS. However, we individualized the cognitive load to produce similar mental fatigue levels in all participants. The resistance training program included six sets of half back-squat exercise with a rest interval of 150 s between sets. A velocity-based load was used instead of a traditional loading-based resistance exercise program. Mean propulsive velocities of $1.0 \text{ m}\cdot\text{s}^{-1}$ (45% 1RM), $0.8 \text{ m}\cdot\text{s}^{-1}$ (60% 1RM), and $0.6 \text{ m}\cdot\text{s}^{-1}$ (75% 1RM) were used as light, moderate, and high intensity-load, respectively. The General Estimating Equations analyzed the main effects and interaction between group (i.e.,

OC101 - MOTOR PERFORMANCE AND PERCEIVED PHYSICAL SELF-EFFICACY THROUGH THE INTERACTION OF TEACHING STYLES AND PRACTICE VARIABILITY IN PRIMARY SCHOOL

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Purpose: Within the school setting, motor activities implemented through a variety of contents and organizational modalities, supported by adequate teaching methodologies, represent an important opportunity to promote harmonious development in children. Physical Education teachers in primary schools can enhance their students' learning by increasing the quality of the interventions proposed. The aim of the study is to evaluate the effects of a didactic intervention, implemented through the interaction of different teaching styles, on motor performance and self-efficacy in primary school children.

Methods: The sample included 60 children (M = 27; F = 33; aged 9.70 ± 0.56), belonging to three class groups. The intervention was conducted over one trimester of the school year by an external expert graduated in Motor and Sports Sciences. Two learning units, each consisting of 6 lessons, were designed for a total of 12 lessons. Activities were proposed by varying production and reproduction teaching styles. Data were collected before and after the intervention. Motor performances were evaluated through four motor tests (SLJ; 4 × 10; MBT; 20 m Sprint). Perceived physical self-efficacy and levels of physical activity were assessed using two self-reports: PSC and PAQ-C.

Results: The results show a significant improvement in motor performance tests for both males and females ($p < 0.05$). Furthermore, following the intervention, significant improvements were recorded in terms of perceived physical self-efficacy levels and an increase in physical activity levels ($p < 0.05$).

Conclusions: Well-supported methodologically didactic interventions can have effects on motor performances, levels of physical activity, and self-efficacy in primary school children. The variation in teaching styles, particularly inclusion and guided discovery, along with the variability of motor tasks, contributes to promoting different learning modalities, enhancing perceived physical self-efficacy, and increasing children's motor performance and physical activity levels.

OC102 - HAND TO THE SHAPE: THE ASSESSMENT OF GRAPHOMOTOR SKILLS IN SCHOOL CONTEXT

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Purpose: The present study was aimed at carrying out a screening of grapho-motor skills in a group of pre-school and primary school children, to identify the executive parameters that require specific interventions to prevent and compensate the graphomotor and writing difficulties that children increasingly are having.

Methods: 60 children aged between 5 and 7 years participated in the study. A graphic test of constructive praxis was administered using the standardized "Hand to shape". The parameters relating to the spatial area (shape, dimensions, above/below, general spatial organization), graphomotor organization (conjunctions; reference lines; extension/non-closure) and motor quality (confidence in the line drawing).

Results: The untreated scores attributed to each parameter in each area were transformed into decimals and then into percentiles (≤ 5 th percentile subjects with inadequate skills, between 6 and 15th percentile subjects at risk, ≥ 16 th percentile subjects with adequate skills). Of all the parameters, the one relating to shape was the most evidently compromised. The "shape" parameter derives from a motor construction for which the child draws on an organizational function, requiring an accommodative effort in copying unknown figures and represents one of the most indicative parameters as an index of writing difficulty, therefore educational interventions must be addressed with an interdisciplinary approach that favors the interaction between the body and movement and the perception of shapes.

Conclusions: The accurate analysis of the various parameters that determine the quality of the graphic trait can make it possible to direct educational planning towards didactic actions capable of preventing and compensating for the difficulties that children widely encounter in graphomotor skills and which have repercussions on the development of writing skills.

OC103 - L'EDUCAZIONE FISICA IN ITALIA: SCENARI, SFIDE, PROSPETTIVE/PHYSICAL EDUCATION IN ITALY: SCENARIOS, CHALLENGES, PERSPECTIVES

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Purpose: Many "sciences" and "practices" are influencing Physical Education (PE), leaving a legacy of a broad, but often confusing and not always coherent language. The SISMeS Working Group "Physical Education & Sport Pedagogy", stated that making this complexity explicit, and proposing appropriate solutions can serve to foster mutual understanding in didactic and research, encourage the dissemination of international literature evidence within PE teachers and students, and raise the attention of policy makers. The main purpose of the document is, therefore, to contribute to a more clear and modern definition of the discipline.

Methods: The document was created through several steps. Firstly, 30 researchers from 16 universities agreed on the purposes, the structure and the overall approach to the document. A comparative approach with the most representative international literature was adopted. All members, then, prepared the different parts of the document; a two-day in-person seminar facilitated the critical discussion around the diverse topics covered. The third and last phase was spent for revising and making the text more homogeneous. A smaller group of authors was involved in this phase.

Results: The document is divided into four parts: (1) The "Epistemological Glossary", which explains the choice of the term "Physical Education" and illustrates the complexity and heterogeneity of the main concepts that guide the discipline; (2) The cultural, contemporary references of the discipline; (3) Methodological and didactic suggestions for planning, managing and evaluating PE classes; and (4) Teachers initial and in-service education.

Conclusions: The consensus document is free to download from the SISMeS webpage for teachers, school principals, scholars, directors of university programmes and policy makers. Authors hope that it can contribute to the growth of PE and for having more people educated to move more.

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OC104 - IN-EAR MUSIC EFFECTS ON RUNNING BIOMECHANICS: A CROSS-OVER STUDY COMPARING RUNNING SPEEDS AND SURFACES IN YOUNG WOMEN AND MEN

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Purpose: Music listening while exercising is associated to physiological and psychological benefits.^{1,2} The distracting role of music on runner's attention is also documented, with potentially detrimental effects on running biomechanics.³ This study tested the hypotheses that 1) music would lead to biomechanical changes, 2) effects would differ between sexes, running surfaces and speeds, and 3) biomechanical changes would be larger in participants displaying higher distractibility at the attention tests.

Methods: Fifty young casual runners (25 females/25males) volunteered for performing 400-m runs at 8 and 10 km/h on treadmill and athletics track while exposed or not to in-ear, 85-decibel tempo-music. Running biomechanics was assessed by wearable inertial units. Main effects of music and interactions with sex, surface, and speed were tested by repeated-measures ANOVA. Secondly, runners' distractibility was tested by Sustained Attention to Response Task (SART) and Stroop attention tests, administered while exposed or not to the same tempo-music.

Results: Music led to significant changes in most biomechanical parameters only when running on the treadmill. While sex and speed were not significant factors, music effects proved slightly but significantly larger in women than men, and at 8 km/h running speed compared to 10 km/h. Regarding distractibility tests, men made significantly more errors in the Stroop test when exposed to music, but this finding was uncorrelated with music effects on biomechanics.

Conclusions: Music listening altered running biomechanics only on the treadmill. Such alterations may reduce running efficiency, warranting consideration from sports professionals, athletes, and joggers exercising on the treadmill as they may lead to higher energy expenditure and potentially enhanced risk for musculoskeletal injuries. Men were more distracted by music than women.

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OC105 - ALTERED CENTER OF MASS KINEMATICS WHILE WALKING USING REBOUND SHOES IN YOUNG HEALTHY FEMALES

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Purpose: Footwear industries have developed a special footwear with an integrated spring system in the shoe (Rebound Shoe—RB). RB are deemed effective in reducing the stress on runners' joints by reducing ground reaction forces during load acceptance. Indeed, a previous study showed that RB can significantly reduce ground impact force during jumping and landing exercises. However, at present no information is available in the literature concerning the impact-reducing ability of RB during simpler activities like gait. Therefore, the aim of this study is to investigate the effects of wearing the RB on center of mass (CoM) kinematics during gait.

Methods: CoM kinematics was recorded using a a waist-worn tri-axial inertial measurement unit (IMU; G-SENSOR 2, BTS S.p.A, Padova, Italy; Full scale: accelerometer ± 2 g) from ten healthy females (Age: 26.9 ± 2.2 years; Height: 1.60 ± 0.05 m; Mass: 59.8 ± 8.1 kg; BMI: 23.6 ± 4.1 kg/m²) while walking for 120 s at 1.25 m/s on a motorized treadmill. Participants were asked to walk on the treadmill either wearing their habitual running shoes (RS) or the RB. To compare CoM kinematics between RB and RS, the Root Mean Square (RMS) of the linear acceleration on the vertical (CC), medio-latera (ML) and antero-posterior (AP) axes were computed (RMSCC; RMSM; RMSAP). The linear acceleration on the CC axis was used to calculate step frequency (STFR), Vertical Stiffness (KV), and the mean across the peak linear accelerations of all steps (^MPeakCC). The variables of interest were submitted to separate RM-ANOVA to test differences between conditions.

Results: Higher RMSCC (RB: 10.18 ± 0.12 ; RS: 10.07 ± 0.05 m/s²; $p = 0.016$), RMSAP (RB: 2.59 ± 0.43 ; RS: 1.90 ± 0.32 m/s²; $p < 0.01$), KV (RB: 22.58 ± 11.18 ; RS: 9.89 ± 3.32 kN/m; $p = 0.004$) and ^MPeakCC (RB: 17.55 ± 1.19 ; RS: 15.06 ± 1.05 m/s²; $p < 0.01$) were observed while participants wore RB compared to RS. Conversely, lower STFR (RB: 0.89 ± 0.03 ; RS: 0.94 ± 0.05 Hz; $p = 0.02$) was observed for the RB condition compared to the RS.

Conclusions: During gait, RB do not reduce the vertical acceleration of the CoM in young healthy female participants. However, wearing the RB improves acceleration of the CoM on the AP axis. The particular shape of the RB might alter the load acceptance strategy which seems not to follow the typical heel-forefoot sequence.

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