

**Editorial**

The European Congress of Adapted Physical Activity (EUCAPA) is a biennial scientific conference organized under the shield of the European Federation of Adapted Physical Activity (EUFAPA) aiming to promote, facilitate and coordinate European cooperation in research, professional preparation, provision of services and promotion of Adapted Physical Activity for people with disabilities. The first congress was organized in Brussels, Belgium, by Professor Jean Claude de Potter, the founding father of EUFAPA, in 1986 and since then the event was organized for fifteen times in twelve different European countries. The sixteenth edition of this conference will be hosted in Portugal by the University of Coimbra, founded in 1290 and inscribed on the World Heritage List since 2013, from the 9th-11th of June 2022.

This scientific and professional event is carried out targeting teachers, educators, coaches, therapists and rehabilitation professionals as well as academics highly interested in the field of Adapted Physical Activity (APA). EUFAPA is committed to show leadership and excellence in the delivery of education and professional collaboration in adapted physical education to the time it offers high quality, legislated service for people with disabilities in a diverse and changing democratic society across Europe.

During the congress days in Coimbra, participants will be presenting and discussing different APA topics using oral, poster or mini-symposium sessions, as well as workshops, professional presentations or video presentations organized in four different thematic areas: Inclusive Physical Education, Physical Activity and Exercise for Health and Well-being, Social Values in Recreation, Leisure and Rehabilitation and Excellence in Disability Sport. To promote scientific cooperation and research the scientific committee invited three world referenced key note speakers, Martin Block (USA), Brett Smith (UK), Yves Vanlandewijck (BEL) and seven distinguished invited speakers, David Rodrigues (POR), Raúl Reina (ESP), Guilherme Furtado (BRA), Kitrina Douglas (UK), Astrid Nyquist (NOR), Amândio Santos (POR) and Thomas Abel (GER) to share with all participants their expertise and updated research, stimulating discussion and new ideas aiming to generate new advances in the field of Adapted Physical Activity.

This special publication is in the European Journal of Adapted Physical Activity (EUJAPA), the official scientific journal of EUFAPA. This decision to publish abstracts for EUCAPA is to allow for future dissemination and to promote submissions to be published as a full manuscript. EUJAPA is a platinum open access journal, now in a continuous mode of publication, instead of two issues per year.

I hope you will enjoy your staying in Coimbra as much as I have enjoyed having the opportunity to organize this conference and contribute for the advances in the field of APA.

José Pedro Ferreira

Chair of EUCAPA 2022

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Oral Presentations

Physical education teachers in special schools. A study case in Spain

Theme: Inclusive Physical Education

ID: 965

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Introduction: In Spain 15,626 students with intellectual disabilities attend special schools. The research question that we tried to answer was: what are PE teaching experiences in special schools?

Methods: The participants were four primary school PE teachers (3 men, 1 woman, age range: 28-41 years) who worked at four Special Schools in the centre of Spain. In all cases, the participant was the only PE teacher in their centre. Individual, semi-structured interviews were conducted with each of them and inductive analysis of the positioning of their work as physical education teachers in this context was performed.

Results: The results revealed three topics: a chance allocation to the schools, job insecurity, with short working periods in these centres and half-time contracts in the case of charter schools, and a lack of resources.

Discussion: The PE teacher's characteristics are different from the rest of the teaching staff of Special Schools, since they are not specialised in special education and they do not receive specific training to work at such schools. Furthermore, in the case of charter schools, which are the majority in Spain, these teachers do not usually work full-time, hindering their continuation and professional development at the centre. This particular positioning of PE in Special Schools had already been pointed out by Maher et al. (2020) in a previous study. **Conclusions:** The experiences of the PE teachers involved in this study seemed to be characterised by a chance allocation to the schools and with no specific training, job insecurity and a lack of space and material resources, all of them revealing the subject's low status.

Keywords: adapted physical education, intellectual disabilities, professional development

References: Maher, A. J., Fitzgerald, H., & McVeigh, J. (2020). Factors influencing the culture of special school physical education: A Gramscian critique. *European Physical Education Review*, 26(4), 954-969.

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Validity and reliability of arabic physical education teachers' self-efficacy instrument toward including students with autism

Theme: Inclusive Physical Education

ID: 916

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Introduction: Self-efficacy (SE) represents one of the most crucial elements contributing to successful inclusion of students with autism in physical education (PE) classes. Therefore, this study aims to investigate the validity and reliability of the Arabic version of the Physical Educators' Self-Efficacy Toward Including Students with Disabilities-Autism (PESEISD-A) (Taliaferro et al., 2010).

Methods: The PESEISD-A is a 10-item instrument ranging from 0 (do not feel able at all) to 10 (feel highly able). The English version was translated into Arabic using the bilingual approach (Brislin, 1970). 150 Saudi Arabian PE teachers (16% female) aged 23–58, completed the Arabic version of the PESEISD-A. Exploratory factor analysis (EFA) and Cronbach's alpha were used to examine the construct validity and reliability of the instrument, considering scores over .70 acceptable.

Results: The results revealed that the Kaiser-Meyer-Olkin measure of sampling adequacy was .89. Bartlett's test of sphericity was statistically significant ($p < 0.001$). EFA results identified that a single component related to the Arabic version accounted for 52.57% of the total variance. The factor loading for all 10 items are above .50. Cronbach's alpha indicated good internal consistency with a score of .89.

Discussion: In line with the current study's results, the English version showed that a single component accounted for $> 57\%$ of the total scores variance. **Conclusions:** The Arabic PESEISD-A appears to be valid, reliable, and suitable to measure SE levels among Saudi Arabian PE teachers toward including students with autism.

Keywords: Saudi Arabia, inclusive physical education

References: Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross- Cultural Psychology*, 1(3), 185-216.
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Physical parameters associated to the ability to exercise in women with achondroplasia. A case control pilot study

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1145

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Introduction: Achondroplasia (ACH) is a skeletal dysplasia caused by a mutation at the fibroblast growth factor receptor 3 gene (FGFR3), a down regulator of growth. The mutation increases FGFR3 signalling, altering proliferation and differentiation of chondrocytes leading to disproportionate short stature. Other physical characteristics include macrocephaly, lumbar lordosis, small hands, and feet. We conducted a case-control pilot study to assess the existence of associations between body composition, physical activity habits and ability to exercise in women with ACH.

Methods: We conducted anthropometric measurements, body composition analysis and five strength exercises. Multi frequency segmental analyser scale Tanita MC780-PMA was used for body composition. For the lower limbs, the 30 second Sit to stand test (30CST) was used and for the upper limbs, hand strength using dynamometer Jamar Plus+, 30 seconds biceps curl with 2,3kg dumbbell, 30 seconds push-up, and 1kg weight throw. Four women with ACH, 2 with exercise habits (Active, AG) and 2 without (Non-active, NAG) were included.

Results: The mean age of participants was of 42,3 years [22-51]. The AG had an inferior average weight (48,2 kg versus 55,4kg), BMI (32,8Kgm-2 versus 44,4), waist circumference (77,8cm versus 92,5), fat mass (26,9% versus 36,7%), and lean mass (69,3% versus 60%). Regarding strength, the AG had a higher average in the biceps curl (22,5 versus 16,5), push ups (15 versus 13), throw distance (250 cm versus 236 cm) and 30CST (16,5 versus 11).

Discussion: We found a strong correlation of weight and push ups (95% CI $P < 0,05$) and between BMI and waist circumference (95% CI $P < 0,05$), fat mass and lean mass percentage (95% CI $P < 0,05$) and biceps curl (95% CI $P < 0,001$). Also, a correlation was found between waist circumference and hand strength (95% CI $P < 0,05$). **Conclusions:** These preliminary results show there could be an association between being physically active, strength and body composition.

Keywords: physical exercise, achondroplasia

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Absent, Incapable, and Normal: Understanding visually impaired students perspectives toward the inclusiveness of their integrated physical education experiences

Theme: Inclusive Physical Education

ID: 1031

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Introduction: Negative experiences which contribute to feelings of frustration, belittlement, and disappointment are often described by visually impaired students about their integrated PE experiences (Haegele & Zhu, 2021). This study's purpose was to examine the perspectives of visually impaired youth toward the inclusiveness of their integrated PE experiences.

Methods: An experiential qualitative design was used, and 22 visually impaired youth acted as participants. One-to-one zoom interviews were analysed using a reflexive thematic approach to construct three themes.

Results: The three themes include: (a) I'm not there, so how could I: The absent person, (b) I can't see, so I can't do it: The incapable person, and (c) It'd be nice to feel like everyone else: The normal person. Feelings of inclusion were described as unavailable to participants during their integrated PE experiences, and that feeling, and being viewed as, absent, incapable, and (not)normal influenced this unavailability.

Discussion: Findings provide examples of how integrated placements do not guarantee inclusion, and support the need for amplifying disabled students' voices in decision making capacities within PE contexts (Goodwin & Howe, 2016; Haegele, 2019). **Conclusions:** We challenge professionals to consider if they are supporting enrolment in integrated classes to benefit students, or in ways that we exploit disabled students to celebrate what they deem to be 'inclusive.'

Keywords: inclusion, physical education, blind

References: Goodwin, D.L., & Howe, P.D. (2016). Framing cross-cultural ethical practice in adapt[ive]physical activity. *Quest*, 68, 43–54.
Haegele, J.A. (2019). Inclusion illusion: Questioning the inclusiveness of integrated physical education. *Quest*, 71(4), 387-397.
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P-value or α level? How misunderstanding of two different concepts (Fisher's Significance testing vs. Neyman-Pearson's Hypothesis testing) destroy the science not only in APA*Theme: Physical Activity and Exercise for Health and Well-being*

ID: 1116

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Introduction: Null hypothesis significance testing (NHST) is probably one of the most used statistical inference methods in social science and biomedical research. This is also true in sports science and adapted physical activity (Ioannidis, 2005; Ivarsson et al., 2015; Nickerson, 2000). In the last decades, many scientists have warned against an inaccurate understanding of this concept whose center is the p-value (Cohen, 1994; Gigerenzer, 2018, Halsey et al, 2015; Ioannidis, 2005), and some investigations have confirmed their concerns (Fanelli, 2009, Head et al, 2015; John et al., 2012). Some evidence is also from the field of adapted physical activities (Martin & Martin, 2021). This inaccurate understanding of p-value is considered one of the causes of the so-called replication crisis (Baker, 2016, Chambers, 2019, Munafò et al., 2017). One way from replication crisis is correctly used and interpreted methods based on the p values (Lakens, 2021). The very important point is the historical context of the origin of NHST and the distinction between two different concepts (Fisher's Significance testing vs. Neyman-Pearson's Hypothesis testing) which are often mixed (Blume, & Peipert, 2003; Dienes, 2008; Hubbard, 2004). The main objective of this contribution clearly describes the most fundamental differences between Fisher's Significance testing (p-value) and Neyman-Pearson's Hypothesis testing (α level). The second aim is to stimulate a discussion on the topic of data analysis and the interpretation of our results in adapted physical activities.

Keywords: questionable research practices, null hypothesis significance testing, replication crisis, statistical power; β level

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Youth sport coach's understanding of athletes with hidden disabilities

Theme: Inclusive Physical Education

ID: 984

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Introduction: Youth sports (YS) coaches are integral in shaping the YS experience. For youth athletes with hidden disabilities (HD), participation in sports may become a negative experience when coaches misperceive or misunderstand their behaviors and label these individuals as "challenging." One key to making the youth sports environment productive for individuals with HD is how the coach manages/teaches the participants. However, prior to introducing the most effective methods for coaches to utilize, it is important to understand coaches' perspectives and knowledge of coaching youths with HD. Therefore, the purpose of this study was to examine coaches' 1) reactive responses to proposed scenarios involving athletes exhibiting challenging behaviors, 2) knowledge of the characteristics of some common HD; Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD), and Specific Learning Disability (SLD), and 3) efficacy in coaching athletes with HD.

Methods: Participants completed a packet consisting of a) open-ended questions on athlete behavior scenarios, b) demographic information, c) efficacy towards working with athletes with HD (Vargas-Tonsing, Flores & Beyer, 2008), and d) listing specific characteristics of individuals with ADHD, ASD, and SLD. Participants were attending a required three-hour training and were asked to complete the surveys while waiting for the training to begin.

Results: 81 YS coaches participated and had a mean age of 33.76 (SD= 11.56) and had 9.41 (SD= 8.76) years of experience. Quantitative and qualitative results will be highlighted.

Discussion: Future directions and practical implications for differentiated methods will be discussed.

Conclusions: Incorporating UDL into coaching education would be beneficial and make a positive impact on YS.

Keywords: physical activity, ADHD, UDL

References: Vargas-Tonsing, T. M., Flores, M., & Beyer, R. (2008). Volunteer youth sport coaches' efficacy beliefs for working with athletes with ADHD. *Journal of Coaching Education*, 1(2), 64-79.

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CSU, Long Beach Adapted Physical Education During COVID-19

Theme: Inclusive Physical Education

ID: 941

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Introduction: The coronavirus pandemic required teachers to abruptly turn to online settings to deliver instruction. Unfortunately, evidence-based guidance for online instruction in the field of physical education is lacking, specifically for students with disabilities.

Methods: A database search was conducted for relevant articles, and a data-charting process was completed to identify articles meeting inclusion criteria.

Results: Five articles were determined to be within the scope of this review (1 research article and 4 commentary articles).

Discussion: This scoping review highlighted a lack of literature pertaining to online learning in K-12 APE.

Conclusions: Considering the likelihood of online learning becoming increasingly relevant, more concerted efforts are needed to investigate trends in these settings to determine best practices and how students with disabilities experience APE within an online setting.

Keywords: Online adapted physical education

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Status of APE Assessment in the United States

Theme: Inclusive Physical Education

ID: 939

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Introduction: The purpose of this survey was to understand physical educators' perceptions of physical fitness assessment related to bullying, gender identity, and meeting the needs of students with disabilities.

Methods: Snowball sampling was used to recruit 1,082 participants that completed the Physical Fitness Test Survey.

Results: Quantitative results from the 1,082 participants that completed the Physical Fitness Test Survey indicated general physical education teachers were significantly more likely to report Individualized Education Program (IEP) and Section 504 plans never/rarely give direction for accommodations or modifications for the physical fitness test $\chi^2 (4, 1031) = 9.55, p = .01$. Most teachers indicated 'neutral' when asked if they know how best to support students who identify as gender nonbinary ($M = 2.89; SD = 1.05$). Analysis of the open-ended questions indicated the two main themes were "how to improve fitness testing" and "challenges in fitness testing."

Discussion: There were six sub-themes that emerged from the data: testing individually or in small groups, testing for privacy, teaching students pro-social behaviors, teaching the "why" of fitness testing, addressing bullying, and accommodating for gender identity.

Conclusions: It is imperative to consider the needs of all students, including those who identify as gender nonbinary or have a disability, and ensure physical fitness testing is conducted in a safe and welcoming environment.

Keywords: Adapted Physical Education, Assessment

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Artistic gymnastics for people with intellectual disability in Spain: A stakeholders' inclusive perspective

Theme: Inclusive Physical Education

ID: 1057

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Introduction: This study explores one unique and outstanding example to provide artistic gymnastics participation opportunities for people with intellectual disability (ID) in inclusive sport settings through the opinion of their stakeholders.

Methods: Seven people (all women) with different roles were interviewed. Semi-structured interviews were designed including the following topics: knowledge and experience in gymnastics for people with ID, its benefits, barriers for including people with ID, participation issues, training possibilities for coaches and future lines for people with ID artistic gymnastic development.

Results: Benefits at physical, personal and social level were highlighted by all participants. Institutional collaboration appears as key in the development of specific set of rules and regulations that take into account the possible adaptations that gymnasts with ID may need to participate in the sport, at club and competition level. Main limitations come from lack of information and training to professionals from the responsible institutions, the lack of interest of people with ID in this sport, the difficulty of inclusion in this sport because of the rigidity of the regulations and the low family support.

Discussion: This club practice and competition opportunities for people with ID in artistic gymnastics appears only in Catalonia. This example should be provided in other regions to allow participation opportunities for people with ID, coaches specific ID training and sport and disability institutional support.

Conclusions: The total inclusion of this group in artistic gymnastics is gradually growing thanks to the initiative of some sport Clubs, the Federació Catalana de Gimnasia and the collaboration.

Keywords: intellectual disability, participation, artistic gymnastics

References: Jeanes, R., Spaaij, R., Magee, J., Farquharson, K., Gorman, S., & Lusher, D. (2018). 'Yes we are inclusive': Examining provision for young people with disabilities in community sport clubs. *Sport Management Review*, 21(1), 38-50.

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"Give me a chance to try and find my way!" Adults with achondroplasia and their experience with physical activity

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1143

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Introduction: The aim of the study is to explore how adults with achondroplasia (ACP) experience participation in physical activity, and to what degree it might be influenced by the hegemonic discourses in society.

Methods: Qualitative in-depth interviews with 10 Norwegian adults with ACP (aged 18 to 78) form the base for the exploration. The interviews were transcribed verbatim and analysed thematically.

Results: This presentation focuses on two themes. 1. Participation is influenced by the attitude and support of others. 2. Participation require testing and trying.

Discussion: The participants emphasise how their participation in physical activity is influenced by the support they get from others. They underline the importance that both persons with ACP themselves and others focus on the possibilities in activity, creating room for trying out, adjusting and evaluating in order for the person to decide whether the activity works and is meaningful to him or her.

Some have become skilled in finding solutions adjusting equipment, exercises and activities - to be physically active with lesser attention to trying to fulfil standards for how movement or activities ought to be carried out.

Conclusions: Doing the same as everybody else is not always important, getting the chance, however, to try out and find one's own ways of doing activities is. Finding activities and adaptations that work, making physical activity enjoyable are what matter the most.

Keywords: short stature, participation, peer support

References: Low, L. J., Knudsen, M. J., & Sherrill, C. (1996, 01 Jan. 1996). Dwarfism: New Interest Area for Adapted Physical Activity. *Adapted Physical Activity Quarterly*, 13(1), 1-15.

Pfeiffer, K. M., Brod, M., Smith, A., Viuff, D., Ota, S., & Charlton, R. W. (2022). Functioning and well-being in older children and adolescents with achondroplasia: A qualitative study. *American Journal of Medical Genetics*, 188(2), 454-462.

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Perception about the practice of physical exercise in four cases of young people with cancer

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1141

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Introduction: The World Health Organization (WHO), through the European code against cancer, advises the population to be more physically active in their daily lives. In the case of children with cancer, this activity needs some adaptation (Acreditar, 2019), and physical activity or exercise during treatment can be used to improve the quality of life of the patient (Schadler et al., 2018).

This study explores the perception and practice of physical exercise in the lives of young people who live or have already lived the experience of cancer in paediatric age.

Methods: Four young people were studied from individual, semi-structured interviews, with mixed content analysis methodology.

Results: Data revealed that practice of sports decreases with the arrival of cancer and presents an association of physical exercise with physical and psychological well-being. Participants advise people with cancer to practice physical exercise.

Discussion: The four cases studied advise the practice of physical exercise to people who have gone through or are going through this disease (Schadler et al, 2018). The existence of sports practice decreases with the arrival of cancer, however when maintained it collaborates a lot in health aspects, this being a great way to start in their physical rehabilitation (Schadler et al, 2018).

Conclusions: Participants consider the practice of physical exercise as important in the lives of people with cancer. The benefits of exercise on well-being and health, in the physical and psychological field, are identified, and the beginning of physical exercise as soon as possible is suggested, for young people with cancer.

Keywords: paediatric oncology, physical exercise, youngsters

References: Schadler, K., Kleinerman, E., & Chandra, J. (2018). Diet and exercise interventions for paediatric cancer patients during therapy: Tipping the scales for better outcomes. *Paediatric Research*. 83(1), 50-56.

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Educasign

Theme: Inclusive Physical Education

ID: 989

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Introduction: Hearing disability refers to any deficiency in someone's acoustic ability, whether partial or total. Deaf people have their own language, the sign language, which is official in Spain since 2007, although not many hearing people are able to communicate in this language. This leads to deaf students attending school centers without teachers who can use sign language. The aim of this project is to present an educational tool for the inclusion of deaf students in ordinary physical education (PE) lessons, in such a way that teachers and deaf students get a better communication and an improved experience in their PE lessons.

Methods: A team of university professors and students of the University of Seville (Spain) made a virtual Spanish sign language dictionary for its application in teaching of physical education: Educasigno. Videos were edited to a standard structure and uploaded to Educasigno Web Site (<http://institucional.us.es/educasigno/>).

Results: 93 sign videos were added in a first batch, and 109 new ones were added later. Currently, the count for uploaded sign videos adds up to 202, roughly 50% of a language's day to day vocabulary occurrences while keeping the list short enough for a teacher to learn.

Discussion: Effective use of Educasigno would allow for a closer understanding between teachers and deaf students while involving other students in the process, making for a more direct communication experience for everyone. The feeling of belonging is an impactful factor in motivating deaf students, and thus using their own language serves as a strategy to achieve this feeling/membership.

Conclusions: Future perspectives of the project involve an increase in available PE-related videos along with the development of a phone app.

Keywords: deafness, hearing impairment, inclusion

References: Fiorini, M.L.S., & Manzini, E.J. (2018). Strategies of physical education teachers to promote the participation of students with hearing impairment in classrooms. *Revista Brasileira de Educaçao Especial*, 24(2), 177-192.

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The SAMU DIS-FIT Battery: Design and results

Theme: Physical Activity and Exercise for Health and Well-being

ID: 993

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Introduction: Numerous studies support that the practice of regular physical activity and the improvement of physical fitness (PF) has a positive impact on the quality of life of people with intellectual disability (ID). The aim of this paper is to present the SAMU DIS-FIT physical fitness assessment battery and the results obtained by the participants according to sex, age and level of PF.

Methods: A cross-sectional study was carried out with 261 participants (82 women and 172 men; 18 to 65 yrs.) with medium or moderate ID. The SAMU DIS-FIT battery was used to assess PF, and 95% of the mean confidence interval for each group (men, women) and for each age range was used in order to interpret the results.

Results: The results are shown for each of the PF variables organized by age, sex and FP level: low, medium and high.

Discussion: This is the first study to show FP values of young people with ID categorized as low fit, medium fit and high fit, without comparing them with people without disabilities.

Conclusions: The findings of this study serve as a first step towards establishing baseline FP values for the population with ID. Using the SAMU DIS-FIT can help people with ID, their families, clinicians, or caregivers to know their fitness level and make predictions based on the values shown in this study, in order to carry out physical activity programmes that will improve their level of autonomy and PF in the future.

Keywords: intellectual disability, physical fitness, baseline values

References: Cabeza-Ruiz, R. (2020). Considerations for the Design of a Physical Fitness Battery to Assess Adults with Intellectual Disabilities: Preliminary Reference Values for the SAMU DIS-FIT Study. *International Journal of Environmental Research and Public Health*, 17, 9280.

Alcántara-Cordero, F.J., Gómez-Píriz, P.T., Sánchez-López, A.M., & Cabeza-Ruiz, R. (2020). Feasibility and Reliability of a Physical Fitness Test Battery for Adults with Intellectual Disabilities: The SAMU DIS-FIT Battery. *Disability and Health Journal*, 13.

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Effect of a workshop on teachers' specialized content knowledge (SCK) for teaching dance to children with disabilities

Theme: Inclusive Physical Education

ID: 1109

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Introduction: The selection and sequencing of instructional tasks (i.e., SCK) is a critical skill of teachers for pupils to achieve an instructional outcome. Research has shown that PE teachers often have limited SCK, which hinders their teaching effectiveness. Professional development content knowledge workshops have shown to be effective in increasing SCK. The aim of this study is to assess the effect of such a workshop on teachers' SCK for teaching dance to children with disabilities.

Methods: This study was conducted with two special education PE teachers of pupils (N=26) with moderate to severe intellectual disabilities. A 4-hour workshop was created around four evidence-based building blocks of dance with a focus on developing SCK. A content map of tasks was used to measure teachers' depth of task development before and after the workshop. A SCK index was calculated by dividing the number non-informing (extending, refining) tasks by the number of informing tasks. Data were reported descriptively. Two trained observers coded independently and achieved an inter-rater reliability of 89%.

Results: Following the workshop, SCK indexes increased to above a threshold of 2.0, indicating sufficient depth of SCK for teacher A (0.41 to 2.6) and teacher B (0.71 to 5.2). Teacher A increased the number of total (17 to 18), extending (5 to 12), and refining (0 to 1) tasks. Teacher B increased the number of total (12 to 31), extending (5 to 24) and refining (0 to 2) tasks.

Discussion: We see a strong increase in SCK index due to a short workshop. Further investigation on the effects of long-term teacher support system could provide valuable insight. Future research should consider larger sample size, simplified data collection and analysis, and environmental factors. A comprehensive workshop in dance will increase the SCK of PE teachers, which will lead to positive learning outcomes for pupils.

Keywords: specialized content knowledge, content map, professional development, instructional tasks

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Depression during confinement in Tokyo 2020 Paralympic project athletes and paralympic hopes

Theme: Excellence in Disability Sport

ID: 1082

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Introduction: In Portugal, the COVID-19 pandemic had implications on the lives of athletes, leading to social isolation and closing the most sports facilities, which caused difficulties in training. This study aimed to compare depression levels by sex during the confinement of athletes from Tokyo 2020 Preparation and Paralympic Hopes projects.

Methods: Forty-five athletes (13 female; 32 male) of the Tokyo 2020 Preparation and Paralympic Hopes Projects participated in this study, with an age of 31.36 (± 11.23) years and 10.53 (± 5.17) years of experience. Data were collected between April and May 2020, through an online questionnaire, which included training variables and the Mental Health Inventory Depression Scale (Veit & Ware, 1983; Ribeiro, 2011).

Results: We verified that the athletes train 5 sessions by week and spend 2 hours by day. Regarding the level of depression, 19 (42.4%) of the athletes presented depressive symptoms, with no significant differences by gender ($p=0.11$).

Discussion: The number of weekly sessions ($p=0.09$) and training hours ($p=0.33$) were not associated with depression.

Conclusions: The athletes from Tokyo 2020 Preparation Projects and Portuguese Paralympic Hopes kept training during the confinement. Almost half of the athletes presented depressive symptoms, these did not relate to the frequency and hours of training. This study revealed the need to do a new mental health assessment of these athletes in normal training and competition situations.

Keywords: Paralympic athletes, training, depression, COVID-19

References: Ribeiro, J. (2011). Inventário de Saúde Mental. Lisboa: Placebo Editora, Lda.
Veit, C., & Ware, J. (1983). The structure of psychological distress and well-being in general populations. *Journal of Consulting and Clinical Psychology*, 51(5), 730-742.

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Fit Families: A physical activity program for parents of children with autism spectrum disorders

Theme: Physical Activity and Exercise for Health and Well-being

ID: 964

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Introduction: Children with autism spectrum disorders (ASD) have limited participation in physical activities (PA). This is due in part to the lack of opportunities and lack of parental awareness on how to engage in PA. Parents may lack the skills to model or teach their children in PA/sport. The purpose of this session is to describe the findings of a four-part program that teaches parents how to engage in PA with their children with ASD.

Methods: Participants were parents (N = 21) of children with ASD ages 4 to 11 years. Participants were randomized into one of three conditions: 1) Workshop Group, 2) Homegroup, and 3) Waitlist control group. Data were collected via semi-structured interviews. Interviews were transcribed and analysed through constant comparative analysis. The Theory of Planned Behavior (TpB) serves as the theoretical framework.

Results: The results revealed that parental insight and expectations toward PA were enhanced as a result of Fit Families. Despite multiple PA constraints, parents reported improved perceived competence in regard to teaching and involving their children with ASD in PA.

Discussion: In alignment with the TpB, all participants attributed a shift in perceived competence as a direct consequence of the program. Parents reported that during COVID, the program became the physical education curriculum for their entire family.

Conclusions: Parents indicated that the physical education-related equipment, along with the activity booklets were instrumental in their capabilities to teach FMS for their children. Fit Families provided an opportunity for parents to be actively engaged with other parents who share similar challenges.

Keywords: ASD, family involvement, fundamental motor skills, interventions,

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Physical activity of elderly during COVID-19 pandemic and experience with online exercise lessons

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1032

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Introduction: The aim of the presentation is to show data about current physical activity (PA) level of older women participating in an intervention study 3-4 years ago. Secondly, we would like to share experience with online exercise for elderly during lockdown.

Methods: Fifteen women filled a survey based on the International Physical Activity Questionnaire (IPAQ). Furthermore, using qualitative research methods, we investigated facilitators, barriers and adherence to PA in two groups of seniors (N=45) participating in online lessons via Google Meet platform on a weekly basis.

Results: Most women maintained sufficient level of PA for general health. 60% of women reported decrease of PA frequency during the pandemic, mainly due to closure of exercise facilities. The data from women following an online exercise showed more than 50% of women continue in online exercise after a year. Some refer to be more satisfied with the online version due to the following advantages: no need to travel over the city, no disturbance by other people noises, being in a safe/clean environment of own house, protection from potential risk of illness. However, nearly half of the previously exercising women stopped regular exercise due to: insufficient internet connection, gadgets or digital literacy to join the lesson, lack of the social benefits from regular meeting, lack of suitable conditions for exercise at home.

Discussion: Opportunity to meet personally at the exercise lesson for elderly has a great positive and irreplaceable role in the quality of life. Many people referred to the negative impact of the pause in regular exercise due to the pandemic. In our presentation, we would like to summarize our experience with one-year long transfer of regular elderly exercise to the online environment.

Conclusions: The COVID-19 pandemic caused changes in PA and exercise behaviour. One of them is the facilitation of online lessons which opens new opportunities for people with special needs.

Keywords: ageing, inactivity, health, lockdown

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The meaning of inclusion in sport according to children with disability, parents and sport professionals: A focus group study of Sport Empowers Disabled Youth 2 - Project

Theme: Inclusive Physical Education

ID: 935

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Introduction: The EU SEDY2 project addresses the topic of encouraging inclusion in sport for children and youth with a disability (YWD). Currently, inclusion is interpreted in different ways that do not take into account the authentic wishes and feelings of YWD. In order to tackle the issues that are currently preventing YWD from participating in sports, the purpose of this study is to reach consensus on the question: ‘Inclusion in sport: what does it mean in practice?’

Methods: To ensure that the authentic views, wishes and feelings regarding inclusion in sport were attained, online focus groups were conducted with YWD themselves, their parents and sport professionals in Finland, Lithuania, Portugal and The Netherlands. Data is analysed using thematic content analysis.

Results: In all, twelve focus groups were held (N=56). Seven main themes emerged from the data. Results show that inclusion in sport according to YWD, parents and sport professionals is about: 1) having a choice, 2) sense of belonging, 3) same rights and equality and 4) everyone can participate. Parents and sport professionals add that: 5) it is also about acknowledging that everyone is unique, 6) inclusion is an ongoing process and 7) terminology (language) is challenging.

Discussion: These results are in line with article 30.5 of the UN convention on the rights of persons with disabilities and have some overlap with previous literature, which shows that inclusion means having a choice across a continuum of segregated, integrated and inclusive sport activities. Our research complements this with the social component of inclusion in having a sense of belonging, having a choice and having the opportunity to be your unique self in a sport setting.

Conclusions: Now we have an improved understanding of the meaning of inclusion in sport according to YWD, this can be taken as a starting point for actual steps of improvement to include more YWD in sport.

Keywords: inclusion, youth, adapted sports

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Rehabilitation or leisure? Practice of physiotherapy and the values regarding physical activities of young persons with profound intellectual and multiple disabilities

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1102

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Introduction: Aim is to introduce results of an academic research project concerning opportunities of young people with profound disabilities to do physical activities as leisure. They are based on published article (Eriksson & Saukkonen 2021) showing, that professional physiotherapy is a crucial practice enabling physical activities to these young people. It shows the basic values constituted in professional practice, and how they justify the necessity of the practice.

Methods: Multi-sited ethnography as methodology, we collected observation and interview data at sites where young persons did physical activities. Data has been analysed by critical discourse analysis.

Results: Medical discourses dominate the practices of physiotherapy and interview accounts relating to the physical activities involved in it. Within the realm of medical expertise, basic function of physical activities is the maintenance of optimal physical condition and health.

Discussion: Bio-medical understanding of disability dominates the practice of professional physiotherapy, and basic professional values are constituted by powerful role of medical expertise, when serving to maintain physical abilities of a person. Enhancing the right to social participation seems to be important in supporting young persons, but with physiotherapists, it is a matter of ethics, not core of professional expertise.

Conclusions: Recreational function of physical activities is less apparent in context of physiotherapy, but importance of enhancing their opportunities to do physical exercise as leisure activity is clearly recognized and faced in demands to promote the right of these young persons to social participation.

Keywords: professional values, physiotherapy, leisure, physical activity, social participation

References: Eriksson, S., & Saukkonen, E. (2021). Rehabilitation or Leisure? Physical Exercise in the Practice of Physiotherapy with Young Persons with Profound Intellectual and Multiple Disabilities. *Scandinavian Journal of Disability Research*, 23 (1), 295-304.

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Physical activity levels and metabolic profile in children with autism spectrum disorders: A cross-sectional analysis

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1036

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Introduction: Despite extensive research describing the physical activity (PA) habits of children with Autism Spectrum Disorders (ASD) (Garcia-Pastor et al., 2018), a more complete characterization of the PA levels, as well as the metabolic profile of these subjects, is essential to inform and improve interventions. This study aimed to compare metabolic profile, PA levels (light-, moderate-to-vigorous intensity), and sedentary time in children with ASD of different age groups.

Methods: A total of 43 male children, aged 4-13 years, with ASD participated in the study. To examine age-related trends, participants were grouped as follows: 4-5 years (n=15), 6-8 years (n=14), and 9-13 years (n=14). Stature, body mass, waist circumference were measured, and body mass index was calculated. Blood samples were taken after 12-hour overnight fasting to assess plasma glucose, total cholesterol, high-density lipoprotein cholesterol (HDL-C), and triglycerides. Low-density lipoprotein cholesterol (LDL-C) was calculated using Friedwald's formula (Friedwald, Levy, & Fredrickson, 1972). Daily PA levels (min/day) were objectively assessed using an Actigraph GT3X+ on the right hip for 7-consecutive days. Participants with valid data (≥ 3 days with ≥ 10 h of wear time/day) were included in the analysis. Descriptive statistics were performed for all variables. Assuming data normality, a one-way ANOVA was used to examine differences in metabolic and PA variables among groups of age, with Bonferroni adjustment when needed. In absence of normality, we used the non-parametric Kruskal-Wallis.

Results: The results obtained indicated that there were significant differences between age groups for moderate-to-vigorous PA (MVPA) ($F = 4.142$, $p = 0.023$), overall PA ($F = 8.934$, $p = 0.011$), vector magnitude counts per minute (VMCPM) ($F = 5.112$, $p = 0.011$), and sedentary time ($F = 5.698$, $p = 0.007$). Using post-hoc analysis, we found significant differences in MVPA ($p = 0.024$), overall PA ($p = 0.048$), VMCPM ($p = 0.008$), and sedentary time ($p = 0.006$) between the group of 4-5 years and the group of 9-13 years, with the latter presenting lower levels of PA and longer time spent in sedentary behaviour. No significant differences were found between age groups for any metabolic variable ($p > 0.05$).

Discussion: Our findings support the notion that PA levels decline with age in male children with ASD. Longitudinal studies are needed to contrast and confirm these results.

Keywords: accelerometry, autism, lipid profile, glycaemic profile

References: Garcia-Pastor, T., Salinero, J.J., Theirs, C.I., & Ruiz-Vicente, D. (2018). Obesity Status and Physical Activity Level in Children and Adults with Autism Spectrum Disorders: A Pilot Study. *Journal of Autism Development Disorders*, 49(1):165-172.

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Dis/ability Sport for “All:” The ultimate dream

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1073

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Introduction: The goal of the paper is to explore the significant influence of the ideological construction of Sport for “All” as a tool to advance the inclusive sport agenda celebrated by organizations such as the United Nations (UN) and the International Paralympic Committee (IPC). We start by surveying the historical development of the Sport for All project, presenting its key goals and problematizing the meaning of All. Next, we examine the concept of human rights, which appears to be foundational within the Sport for All project, questioning its practical usefulness. To address this concern, we outline the human development and capabilities approach as a better tool to guide and evaluate efforts to create sporting opportunities for every single individual. Furthermore, we suggest that before such an ideal can be achieved, systemic ableism must be identified, confronted, and challenged, inside and out of the world of Sport, because the ideology of ability is the root of disability oppression. Ultimately, we ask adaptive physical activity practitioners and researchers alike to be mindful of politically laden slogans, to critically reflect upon the utility of their rhetoric and to creatively and bravely transform Sport so that all movement activities can inherently welcome and celebrate diversely embodied individuals, while dismantling ableism. Only then will we be able to realize the Sports for All Ideal.

Keywords: human rights, disability, capabilities approach, ableism

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Heart rate variability behaviour in athletes after injury: A systematic review

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1001

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Introduction: Heart rate variability (HRV) has a relationship with musculoskeletal injury since vagal afferents that lead to the nociceptive response and regeneration process are influenced by sympathetic nervous system (SNS) and parasympathetic nervous system (PNS) through baroreflex activity. The aim of this systematic review is to investigate the adaptations of the autonomic nervous system (ANS) after a musculoskeletal injury obtained by measuring HRV in athletes.

Methods: This systematic review followed the PRISMA statement. Web of Science, Pubmed, SCOPUS and Sport Discus were searched to identify relevant cross-sectional, longitudinal, and cohort epidemiological studies. Eligible studies evaluate HRV through electrocardiogram or other similar devices in athletes (≥ 16 years old) without associated cardiac/respiratory (or other) complications, and written in English.

Results: After screening 1737 potential articles, four studies met the inclusion criteria. These, included participants with concussion ($n = 63$) and healthy control ($n = 140$), who practiced different sports.

Discussion: All studies demonstrate a reduction in High Frequency Power due to a higher sympathetic activation and a lower parasympathetic activation by ANS. Low Frequency/High Frequency Ratio (LF/HF Ratio) presented high values during the first week after injury that tends to decline with time and recovery.

Conclusions: In the frequency domain, a decrease in High Frequency power and an increase of LF/HF Ratio is expected, as the activity of SNS increased, and PNS decrease after injury. HRV may be useful for monitoring the activity of ANS evaluating signals of somatic tissue distress, and early identification of other types of injuries. Further research should be performed to investigate the relationship between HRV and others musculoskeletal injuries.

Keywords: Heart rate variability, autonomic nervous system, athlete

References: Kisser, R., & Bauer, R. (2012). *The burden of sports injuries in the European Union*. Austrian Road Safety Board.

https://www.sicherheit.sport/app/uploads/2014/12/burden_report.pdf

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Regular gait improves the perfusion adaptation in the lower limb – an exploratory study

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1147

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The physiological impact of physical activity in vascular health is still puzzling. Our group has been studying relationships between muscle performance and local perfusion as determinants of vascular health. This study explores the impact of regular walking in two groups of young healthy women selected according with the self-reported level of physical activity –

Group A, who reported more than 6 h/week of regular physical activity (21.0 ± 2.0 years old, $n=5$) and Group B, who reported no special physical activity whatsoever (22.2 ± 2.4 years old, $n=5$). The protocol included five minutes standing for baseline measurements; five minutes regular walking; and five minutes standing recovery. Perfusion was continuously assessed in the forefoot by Laser Doppler Flowmetry (LDF) and polarized spectroscopy (PS).

Baseline perfusion was similar in both groups for LDF and PS. Gait significantly increased LDF perfusion in both Groups and decreased PS values in both groups. In baseline and exercise, Group B individuals depict higher variations - LDF increased by 29% in Group A compared with 44% in Group B while PS decreased by 9% in Group A and 27% in Group B. By the end of recovery, perfusion was not different from baseline.

These results consistently show that gait evokes an immediate adjustment of the locomotor perfusion structure in the lower limb, mobilising blood from the skin surface to the deeper structures as shown by the decrease of PS and the increase of LDF perfusion. Although based in the same optical principles, LDF and PS measure at different depths depending on their wavelengths. These results also indicate that this simple movement involves higher perfusion adjustments in the non-activity (B) group which is inline with our understanding that regular physical activity/exercise results in better muscular performance.

Keywords: gait, physical activity, perfusion impact

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Tears and fears: A creative non-fiction account of autistic youth integrated physical education experiences

Theme: Inclusive Physical Education

ID: 899

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Introduction: The drive to integrate disabled students into the same educational settings as their non-disabled peers has resulted in disparate opportunities and experiences. With that, more autistic youth than ever before are expected to assimilate into systems that are often not considerate of their needs and capabilities.

Methods: Eight autistic youth participated in the research. A semi-structured interview format was used that focused on centering and amplifying the voices of autistic students. The stories were subjected to thematic analysis. We then drew upon guidelines offered by Cheney and Caulley to craft a creative non-fiction account about Caleb, our main character, and his experiences of PE. Our story comprises of several scenes in order to illustrate experiences in motion, as life is, together with a few core characters to emphasize the relational dimension of Caleb's story.

Results: In this study, a non-fiction narrative depicts the experiences of Caleb, an autistic young person who is enrolled in an integrated PE class, in five unique and connected scenes.

Discussion: Through Caleb's story, we explore the complexity of relationships and interactions between autistic youth and their peers and teachers in physical education, and how they may influence the ways and extent to which autistic youth experience feelings of belonging, value and acceptance in physical education spaces. We also consider the role of teacher expectations, curriculum decisions and pedagogical actions in shaping the PE experiences of autistic students.

Conclusions: Caleb's story was informed by the embodied experiences of eight autistic youth in the U.S. Similar to other reflections about integrated PE spaces, participants provided accounts where feelings associated with belonging, acceptance, and value were rare. As such, Caleb's story provides an unapologetic depiction of what challenges within integrated PE classes may look like through the lens of autistic youth.

Keywords: belonging, autistic youth, non-fiction narrative

References: Caulley, D. (2008) Making Qualitative Research Reports Less Boring: The Techniques of Writing Creative Nonfiction. *Qualitative Inquiry* 14 (3): 424–449
Cheney, T. (2001) *Writing Creative Nonfiction: Fiction Techniques for Crafting Great Nonfiction*. Ten Speed Press.

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The Gatekeepers to Fitness: A correspondence study to examine disabling practices among fitness center personnel

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 942

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Introduction: Fitness centers may be an ideal setting for physical activity, yet qualitative findings suggest social-level barriers constrain access for people with disabilities. To further test this, I employed an online message correspondence study to investigate the effect of impairment status on the responsiveness of a sample of fitness centers to requests for services.

Methods: Email requests were sent to 800 fitness centers, of which 200 were tailored to each of the four investigative conditions (i.e., control, vision loss [VL], spinal cord injury [SCI], or being autistic). The electronic messages were manipulated to (a) disclose experiencing one of three conditions: VL, SCI, or being autistic or (b) not disclose one of the aforementioned conditions (i.e. the control message). I assessed whether responsiveness varied based on whether the “requestor” disclosed having VL, SCI, or being autistic, compared to the responsiveness to the requests that did not disclose one of these conditions.

Results: The odds of receiving a positive response were 40.5% lower for individuals with VL ($p = .011$) and 33.3% lower for individuals with SCI ($p = .055$), as compared to individuals without an impairment. Specifically, the odds of receiving a positive response for personal training were 58.8% lower among individuals with VL ($p = .003$) and 41.1% lower for individuals with SCI ($p = .065$).

Discussion: Social level barriers can present as a pervasive disabling factor within physical activity settings, undermining other attempts to remove barriers, such as environmental barriers. This study demonstrates that disabling practices of fitness center personnel constrain access to fitness centers for individuals with VL and individuals with SCI.

Conclusions: Elucidating the causes of unresponsiveness to individuals with VL and SCI require urgent exploration so as the negative consequences on the participation of the individuals with these conditions is arrested.

Keywords: discrimination, disability, gyms, access, social barriers

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Development of a survey measuring parental physical activity support in parents of children with disabilities

Theme: Physical Activity and Exercise for Health and Well-being

ID: 954

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Introduction: Parental support is crucial for the promotion of physical activity (PA) for children, including for children with disabilities. The purposes of the current study were to develop and validate a questionnaire to measure parental PA support in parents of children with disabilities and to examine the factors associated with parental PA support.

Methods: A questionnaire measuring parental PA support in parents of children with disabilities (PPSQ for PCD) consisting of three constructs (encouragement, co-PA, and logistic support) with 19 items, was initially developed based on a systematic literature review and expert consultation. Confirmatory Factor Analysis was implemented to analyse the factor structures of the PPSQ for PCD in a sample of 210 parents of children with disabilities. Moreover, three independent multiple regression analyses were conducted to examine associations between the three constructs and parental PA orientation variables (parental PA importance, enjoyment, and behaviors).

Results: The final model consisted of the three constructs with 12 items (four items in each construct), which revealed an excellent model fit ($\chi^2 = 78.42$ [df = 51, $p = .008$], CFI = 0.98, GFI = 0.94, RMSEA = 0.05). The multiple regression analyses revealed that parents' perceptions of the importance of PA were associated with their encouragement for their child's PA. Parents' own PA behaviors, and their enjoyment of PA were associated with co-PA between parents and children. Lastly, parents' own PA behaviors and their perceptions of the importance of PA were associated with their logistic support (all p 's < .05).

Discussion: The current study found that the PPSQ for PCD provided a three-factor structure including encouragement, co-PA, and logistic support, and they appeared to be statistically distinct constructs. The current study adds evidence regarding the multi-dimensionality of parental PA support in parents of children with disabilities.

Keywords: caregiver, exercise, father, mother, survey, validity

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Retrospective examination of the physical education experiences of disabled trans adults

Theme: Inclusive Physical Education

ID: 1013

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Introduction: Individuals who are both disabled and trans “often find themselves twice invisible—both in the able-bodied LGBT community and the heteronormative (i.e., assuming heterosexuality is the norm) disability community” (Morgan et al., 2011, p. 7). These experiences are important to consider in school contexts such as physical education (PE).

Methods: This study, framed within an interpretivist paradigm, used intersectionality as a conceptual framework to understand how disabled trans students experienced PE. An interpretative phenomenological analysis (IPA) research approach was used and six adults (aged 18-30), who identified as: autistic, neurodivergent, disabled, trans, non-binary, and queer, participated. A six-step thematic development process aligned with the research approach was used for data analysis.

Results: Three themes were constructed: (a) elementary to secondary: participation and expectation changes, (b) surviving inaccessible spaces: impact of PE on school experiences, and (c) becoming more self-aware: navigating labels and needs in PE.

Discussion: The findings in this study support many of the previously understood experiences of disabled or trans students in PE while adding a nuanced understanding of the experiences of disabled trans students. Most significantly, participants described the mental and/or physical toll PE had on their whole school experience when faced with both gender- and disability-related inaccessibility.

Conclusions: The intersectional nature of disabled and trans identities were intertwined and hard to divorce, but that disability-related or gender-related needs may come to the forefront of and shape specific experiences or lead to inaccessible opportunities.

Keywords: LGBTQ, gender identity, chronic pain, school

References: Morgan, J. J., Mancl, D. B., Kaffar, B. J., & Ferreira, D. (2011). Creating safe environments for students with disabilities who identify as lesbian, gay, bisexual, or transgender. *Intervention in School and Clinic*, 47(1), 3-13.

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Online training in inclusive physical education: Differential impacts on self-efficacy and attitudes of undergraduate physical education students

Theme: Inclusive Physical Education

ID: 976

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Introduction: Online education has gained popularity and is practiced within physical education teacher education (PETE) programs. Several online programs for teaching inclusive physical education have been proposed and their impact investigated. The purpose of the current study was to analyse the differential impact of a 1-semester undergraduate compulsory course (14 online modules) on self-efficacy and attitudes of PETE students across disability conditions and teaching situations.

Methods: All students participating in an online course were invited to fill in an online survey at the beginning and the end of the course. A 1-5 Likert scale was used to evaluate their self-efficacy across three situations (skill learning, fitness training, and game participation), and 1 attitude question (schooling in general or special education) referring to each of five disability conditions: Severe visual impairment (SVI), Intellectual disability (ID), Autism spectrum disorder (ASD), Wheelchair using due to spinal cord injury (SCI) and locomotor deficiency due to cerebral palsy (CP).

Results: Out of 305 participants, 171 students (56%) filled in forms at the beginning and the end of the course. In the beginning, SE differed significantly (SVI < other conditions). In the end, SE significantly improved across situations ($p < .001$) for SVI, ID, and SCI conditions and in ball games for CP condition. Students' attitudes were significantly lower at the beginning and significantly improved at the end of the course ($p < .001$) for SVI, ID & ASD. There were significant correlations ($r > .05$; $P < .0.5$) between pre-course data and change scores.

Discussion: Participants differed in their prior attitude and SE across conditions and teaching situations. The impact of course participation predominantly changed attitudes toward inclusion in children with communication difficulties and SE toward inclusion of children with mobility difficulties. Our outcomes should be considered when determining online course content.

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Peer instructors support physical and social functioning of older persons

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 981

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Introduction: Older persons with mobility limitations experience increased difficulties and lack of support in participating in group exercise. Training of volunteers as peer instructors may offer a novel, feasible opportunity to increase inclusion and functioning. To promote physical and social functioning of older people we aimed to create a Training Model that 1) develop and implement local exercise activities 2) train local senior volunteers to act as peer instructors and organize various exercises.

Methods: The model was designed at Age Institute and launched into municipalities. It was part of a National Strength in Old Age Program that promotes physical activity in old age. The Model included 3 phases 1) training of local professional to act as trainers for the local volunteers 2) training of local volunteers to become peer instructors in exercise groups 3) setting up local exercise groups and activities for older persons by the peer instructors. Professionals in the municipal sport or health care sector offered advice and equipment to the peer instructors, who planned exercises independently. The peer instructors had a regular possibility for meetings and further training. Feasibility and effects on older persons functioning were measured.

Results: There are now over 1000 instructors who has took part in the Training Model and also trained another thousands of peer instructors. Peers organized various exercise and social activities. All these activities succeeded to increase the mobility, functional capacity, and inclusion of older persons.

Discussion: Physical activities bring people together and can be organized by peer instructors. For the active seniors, the peer training provides an opportunity for life-long learning and well-being.

Conclusions: Training volunteers to become peer instructors is a good concept to start new activities and is an easy, safe and effective way to improve mobility, strength, and social function.

Keywords: peers, volunteers, social function, physical function

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Service design in promoting adaptive activities in services providing everyday support

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1041

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Introduction: In Finland, nearly 14,000 people live in housing services for people requiring mental health rehabilitation and people with severe disabilities. Housing services refer to the statutory provision of residential care and supportive housing to people who need support for a special reason. The Finnish Paralympic Committee's Hyvät muuvit (Great Moves) project promotes activity and exercise with the above-mentioned target group. People working with them are also being supported.

Methods: The project's approach is a target group-oriented service design method, based on a holistic and person-centered approach, a planned process, and tools supporting development work (Stickdorn et al., 2018). Information and feedback on the amount of activity of the clients have been obtained e.g., by means of interviews and surveys.

Results: In 2019-2021 Great Moves project organized 9 activity pilots with different partners. Around 1,000 people were reached in the first year and 1,500 people in the second year, and a total of 1,222 people from different pilot sites have participated in the events. The feedback collected has been good from both clients and employees.

Discussion: Two thirds of the project period was during the COVID-19 pandemic. The work carried out with the target group has been very productive. Understanding, co-operation, motivation and inclusion have become the key issues of promoting activity and exercise.

Conclusions: The project has shown that housing services staff needs more support in these very areas, and changing the culture requires time, and different customer groups require diverse expertise. These issues also require further training in order to establish more permanent skills among the staff and to integrate a fully inclusive activity culture in their everyday support work.

Keywords: understanding, co-development, inclusion

References: Stickdorn, M., Hormess, M., E. Lawrence, A. & Schneider, J. (2018). *This is service design doing: applying service design thinking in the real world*. O'Reilly Media, Inc., 19-27.

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The regional approach to sport for people with a disability in the Netherlands

Theme: Physical Activity and Exercise for Health and Well-being

ID: 948

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Introduction: In 2015, the government introduced the policy program ‘Active without limits’. This program aimed to create regional partnerships responsible for finding and creating appropriate, accessible and nearby opportunities for sports for people with disabilities (pwd). By the end of the program in 2019, these partnerships were an important part of the sport infrastructure. The partnerships were expected to continue independently under the National Sports Agreement (NSA). The aim of this research was to examine the current status and operations of the regional partnerships for sport for pwd.

Methods: An online survey among the regional partnership coordinators. The survey consisted of open and closed questions.

Results: 70% of the regional coordinators completed the survey (n=35). The main tasks of the partnerships are finding appropriate sport opportunities within the region and connecting pwd to these opportunities. The parties involved in these partnerships are often sports providers, municipalities, care institutions, educational institutions and wellness institutions. Most of the regional partnerships are growing and focused on expanding their services to other minority groups. Communication is an important factor for a successful partnership, whereas lack of security, support and resources are barriers towards a successful partnership.

Discussion: The regional approach to connecting pwd to sports remains an important part of the Dutch disability sport landscape. This is demonstrated by continued efforts of the regional partnerships under the NSA. The main goal of the regional partnerships is still connecting pwd and sport within the region. The regional partnerships are still operating and focused on connecting pwd to fitting sports. They do this with a broad range of partners.

Keywords: partnerships, regional, sport

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Trends in motor skill proficiency levels among children with intellectual disabilities aged 4-12 years - A systematic review and meta-analysis

Theme: Physical Activity and Exercise for Health and Well-being

ID: 952

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Introduction: Fundamental movement skills (FMS) represent the ‘building blocks’ of specific movement skills such as running, kicking or jumping. The aim of this meta-analysis is to stress the evidence of the differences in FMS proficiency between children with intellectual disabilities (CWID) and typically developing children (TDC).

Methods: A systematic search of six electronic databases was performed. The initial search yielded 23,766 studies, with 26 meeting inclusion criteria. Cross sectional, longitudinal and experimental studies were included if they assessed FMS proficiency between TDC and CWID aged 4-12 years. The extracted data was analysed using a two meta-analytic multivariate model with five outcomes in total.

Results: The study showed that the standardised mean difference (Hedges g) in FMS between TDC and CWID is large. Specifically, significant differences between the two groups emerged in all five outcomes: i) Total Locomotor score ($g = 1.14$; CI 95% [.71, 1.57]); ii) Total Object manipulation score ($g = 1.26$; CI 95% [.81, 1.70]); and iii) Balance ($g = 1.26$; CI 95% [.52, 1.99]); iv) Run skill ($g = .86$; CI 95% [.33, 1.39]); v) Throw skill ($g = .89$; CI 95% [.02, 1.75]).

Discussion: The results are a precise estimate of the effect on CWID. With evidence showing significantly lower FMS performance among CWID, highlighting CWID are less likely to participate in physical activity with direct impact on health outcomes and an overall poorer quality of life.

Conclusions: In order to reduce the magnitude of difference in FMS proficiency levels, further investigation is required to identify effective intervention strategies that can guide the design and implementation of future interventions.

Keywords: fundamental movement skills, locomotor skills, object control skills, balance

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Social values in a wheelchair tennis training program for youth with disabilities

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1049

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Introduction: This study adopted a social relational lens as critical for distinguishing between impairment and the personal experiences of impairment due to the restrictions within a social setting. The purpose of this study was to explore the social experiences of participants in wheelchair tennis program.

Methods: Data sources for this study were focus group interviews, individual interviews and researcher observations. Interview transcriptions were analysed thematically. A three-member team analysed the data by independently reviewing the transcripts.

Results: Two primary themes were identified: (1) disablism in everyday life, and (2) constructing 'competent' identities on the tennis court. Family members and coaches reported that outside of the wheelchair tennis program, athletes were excluded from many aspects of daily life, including able-bodied sporting opportunities. Sporting events at school were often unavailable for participants because of barriers in the built environment. Outcomes demonstrated the relationship of structural disablism to internalized disablism across aspects of daily life. Participants described the wheelchair tennis program as an affirming, non-disabling space. Also, they described observing changes to the athletes' self-confidence and physical selves as an ongoing process as they progressed within the tennis program.

Discussion: Participants, both the athletes and parents, countered the psycho-emotional implications by collectively creating a community that stood in opposition to a conventional understanding of disability.

Conclusions: The results revealed a repositioning of the athletes and their families and how they connected within their social world through meaningful relationships that altered their positioning and social representation.

Keywords: social relation, wheelchair tennis

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Inclusive approaches and athletes' involvement in Austrian tennis

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1043

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Introduction: Although the UN-CRPD clearly stipulates the right for people with disabilities to participate in exercise and sport as leisure activities, offers in tennis yet are mainly exclusive for specific target groups like wheelchair tennis or people with intellectual disabilities. With its ranking system like the 'international tennis number' (ITN) or similar approaches analogue to a 'handicap' in golf, tennis has the unique opportunity to design inclusive competitions for all athletes irrespective of age, gender or disability. Thus, the aim is to address the perspectives of all athletes on such inclusive and competitive events.

Methods: Therefore, several inclusive competition formats were installed in the years of 2020 and 2021 in the province of Styria, Austria. These activities were accompanied by research activities like a survey tool based on the 'index for inclusion' and selected structural interviews. In total there were 56 players or coaches (22 % female; age: $M = 39.9$ years; $SD = 11.9$; experience: $M = 17.2$ years; $SD = 10.9$), of which 12 Special Olympics and 9 wheelchair tennis players. Furthermore, data taken from a survey of competing athletes ($N = 879$) about their contacts to people with disabilities was also considered.

Results: Both athletes with and without disabilities are very satisfied with inclusive tennis offers, but accessibility seems to be a major topic especially for those with disabilities. Moreover, only 13.3% (117 of 879) of players without disabilities taking part in regional competitions, had ever played with or against an athlete with disability.

Discussion: The results indicate that athletes are very content with inclusive approaches irrespective of a disability. Still, it remains mandatory to tackle the issues of accessibility and raise awareness for the topic. **Conclusions:** Therefore, it could help to install meaningful and inclusive leisure time activities already for children and involve athletes in these processes.

Keywords: disability, inclusion, Special Olympics, wheelchair tennis

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The Calgary Adapted Hub: Set apart by evidence-informed adapted and inclusive programming

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1024

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Introduction: Youth with disabilities are significantly less active than their typically developing peers. There are many barriers to participation in physical activity for people with disabilities. The Calgary Adapted Hub (CAH) is a collective of seven Calgary-based organizations working together to ensure sport and recreation is accessible to all (est. September 2020). CAH aligns research with programming to inform on the greatest public health impact through improvements in overall health and wellbeing, social inclusion, , and quality of life. CAH will inform future evidence-based programs.

Methods: CAH research uses a mixed-methods longitudinal cohort study. Participants (4-25 years) are asked to complete a short battery of questionnaires and wear an Actigraph for 1 week pre-, during-, 6-s, and 12-months post-program. Participants include youth with disabilities registered in CAH partner programs and those waitlisted to programs (control group).

Results: Evaluation of a CAH 1-week, try-it, summer sport camp found that children ($z=-2.10$; $p=0.04$) and adolescents ($z=-2.31$; $p=0.03$) had higher moderate-to-vigorous physical activity (MVPA) levels during camp compared to pre-camp. The increase was only sustained by children (ages 8-12) at 12-months following camp ($z=-2.02$; $p=0.04$). No changes were found in self-perceptions and attraction to physical activity at follow-up.

Discussion: Seasonal changes may impact levels of PA. Our study demonstrates increased levels of MVPA are maintained at 12 months in children. Future research will include a control group and multiple programs to explore level of participation, quality of life, and the impact of programs on primary caregivers. Associations between outcomes will also be evaluated.

Conclusions: This research will inform the development of novel physical activity opportunities for youth of all abilities to mitigate co-morbidities, reduce financial burdens, improve social connections, and overall quality of life.

Keywords: adapted physical activity, adapted, inclusive, sport, recreation, children, adolescents, young adults, disability

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Inclusion of students with disabilities in physical education classes: Perception of physical education teachers

Theme: Inclusive Physical Education

ID: 968

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Introduction: The subject of Physical Education (PE) plays a fundamental role in the motor and social development of an individual. with disabilities have less motor experiences compared to their non-disabled peers (Qi & Ha , 2012). Moreover, they found that students with disabilities can obtain gains in terms of social interactions through the Physical Education class. The objective of this descriptive study was to identify the perceptions of Physical Education (PE) teachers regarding the inclusion of their disabled students in their classes.

Methods: The sample consisted of 154 PE teachers of both sexes (43.34 years, sd=9.14; 58% men) and with an average of 18.25 years of teaching service. The questionnaire was built after a literature review, with the aim of evaluating the perception of PE teachers about the inclusion of students with disabilities and distributed online (Google Forms platform), consisting of multiple-choice questions (Likert 5-point scale).

Results: The results showed that 50% of the teachers reported having a lot of difficulties in including students with disabilities in PE classes, 58% said they found it easy to create inclusion strategies, 39% considered they did not have enough training to work with students with disabilities and 84% stated that they would like to have more knowledge about the most common pathologies and their key characteristics.

Discussion: The main barriers to inclusion were also identified, mainly class size; lack of knowledge about inclusion strategies; inappropriate behavior and motor difficulties of students with disabilities.

Conclusions: we conclude that half of the PE teachers perceive that they have difficulty in including students with disabilities in PE classes.

Keywords: inclusion, perceptions of PE teachers

References: Qi, J. & Ha, A. (2012). Inclusion in Physical Education: A review of literature. *International Journal of Disability Development and Education*, 59 (3), 257-281.

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The impact of a 10-month physical activity program on physical fitness of persons with schizophrenia

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1108

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Introduction: Schizophrenia is considered the most debilitating psychiatric illness affecting 1% of the world population. It is characterized by a range of positive, negative, cognitive and psychomotor symptoms. This disease is associated with risk factors such as cardiovascular disease. Patients present high levels of sedentary lifestyle and reduced motivation for physical activity (PA). However, it is widely recognized that regular PA practice improves physical fitness (PF) and brings benefits to a person's physical and mental health. **Purpose:** To evaluate the impact of a 10-month PA program on PF, functional capacity and PA levels in people with schizophrenia.

Methods: Eighteen patients ($M \pm 43$; $SD \pm 6$ years) attended a 10-month PA program with a triweekly frequency. The Eurofit test battery (body balance, dominant upper limb speed, flexibility, abdominal muscle endurance, explosive strength, static strength and running speed) and the functional exercise capacity (6MWT) were used to assess PF. Height and weight were measured using standard methods and PA levels obtained through accelerometry.

Results: After the program, the levels of moderate/vigorous physical activity increased significantly ($p < 0.05$). Contrary to our expectations, no significant changes were found for PF or BMI. Our findings were probably affected by COVID-19 pandemic, as the majority of the participants (66.7%) attended less than 50% of the sessions.

Discussion: Strategies should be taken when working with this population to improve compliance rates. **Conclusions:** An exercise program may increase PA levels of people with schizophrenia however more research is needed to find its impact on fitness levels.

Keywords: physical fitness, functional exercise capacity, physical activity levels, schizophrenia

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Strategies for promoting sports participation of young people with disabilities: The view of high-level Portuguese athletes

Theme: Excellence in Disability Sport

ID: 1052

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Introduction: Sports participation is low in young people with disabilities (YPWD). Measures are needed to attract a higher number of regular practitioners. Due to the life and sports experience of top athletes with a disability, listening to their perspectives regarding youth sport participation could be very helpful.

Methods: Eighty-one athletes integrated on the Paralympic/Deaflympic National Preparation Program answered a questionnaire (google forms) containing open and closed-ended questions on sport-related aspects. Several methodological steps were followed to ensure that the questionnaire was a valid tool. Content analysis was performed on the open-ended questions.

Results: Six categories emerged from the content analysis on the measures proposed by athletes for involving YPWD in sport: “divulcation and promotion of disability sports” (27.6%), “support from sport-related entities” (19.5%), “specific measures at the schools” (14.9%), “promoting social/sports inclusion” (13.8%), “well-prepared sports clubs” (12.6%), “promoting empowerment and resilience of people with disabilities” (11.5%). Additionally, 13 subcategories were coded within the above categories, such as “offering disability sports practice events in several contexts”, “quality physical education and disability sports at schools”, “equality and changing societal perspectives on disability”, and “more clubs involved and well-prepared”.

Discussion: This study provided significant insights on the perspectives of elite para sport athletes regarding strategies for promoting sports participation of YPWD. Overall, the athletes highlighted the (i) relevance of disseminating disability sports information and (ii) of schools and sport-related institutions offering appropriate activities and support for YPWD.

Conclusions: Stakeholders (e.g., government, educational system, sports associations) should consider the collected data to implement measures for involving more YPWD in sports.

Keywords: physical activity, youngsters, disability, qualitative research

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Evidence based classification in sitting volleyball: A delphi study

Theme: Excellence in Disability Sport

ID: 1002

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Introduction: According to the International Paralympic Committee Classification Code each parasports should develop classification system using evidence (Tweedy & Vanlandewijck, 2011). Consultation with experts is necessary to collect evidence. The aims were to evaluate the minimum impairment criteria (MIC) for each type of impairment in SV based on experts' opinion.

Methods: The Delphi study method (Hsu & Sandford, 2007) was used. The threshold for consensus was set up for 70%. Three phases were done. Questions were referring to MIC. World ParaVolley were asked to delegate experts: 58 experts (49 in the first phase, 38 in the second, 25 the third). The study was approved by the Institutional Review Board.

Results: In the phase 2 there were no consensus in 10 MIC: limb deficiency lower limb, leg length discrepancy, loss of muscle points in lower limbs, impaired passive range of motion (PROM) knee one side, impaired PROM ankle, limb deficiency upper limb (thumb and 2 adjacent fingers on one hand; index and long fingers both hands; dysmelia reducing length of upper limb by 25% or >), impaired wrist PROM, fingers PROM. After the phase 3 there were no consensus only for limb deficiency lower limb (Chopart/Lisfranc amputation one or both sides). 61% respondents agreed with this MIC, 39% respondents suggested more restrictive criteria as through ankle amputation, 28% were not qualified to answer.

Discussion: MIC are discussed among experts not only in SV. SV experts' suggestions are important to find consensus and areas to develop SV classification.

Conclusions: Experts agreed that the current MIC for SV are proper. The future MIC development should apply to level of lower limb amputation.

Keywords: Paralympics

References: Tweedy, S. M., & Vanlandewijck, Y. C. (2011). International paralympic committee position stand–background and scientific principles of classification in paralympic sport. *British Journal of Sports Medicine*. 45, 259–269.

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Anaerobic parameters variables as specific determinants of functional classification in wheelchair basketball

Theme: Excellence in Disability Sport

ID: 985

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Introduction: Currently, each parasport is encouraged to consider evidence-based classification to develop their classification system. The aims of this study were to: (1) assess the relationship between trunk function and anaerobic power determining proficiency in wheelchair basketball, and (2) determine “natural classes” in wheelchair basketball based on anaerobic power.

Methods: Fifty-nine elite players (representing five national teams) were divided into four main functional classes: 1 (n = 17), 2 (n = 14), 3 (n = 16), 4 (n = 12). The 6x10s Anaerobic Power Test was conducted using an arm crank ergometer. Mean of mean power, mean of peak power, mean of relative mean power, mean of relative peak power, and power decrement were calculated for the 6x10s and for 3 x 10 s tests.

Results: The Spearman’s correlation matrix revealed significant correlations between classes and the values in the 6 x 10 s test. This confirmation between anaerobic power and players’ classification endorse the split of players into different classes. Furthermore, the clusters analysis (with fair quality) divided the players into two “natural classes”.

Discussion: The first resulting class was mainly formed of participants from Group 1 (71%). An important complement to this research could be to consider wheelchair acceleration and trunk volume of action in wheelchair basketball classification.

Conclusions: The study confirmed a strong relationship between anaerobic power values in the 6 x 10 s and and 3 x 10 s period trials, and players’ WB classification. Two “natural classes” of WB were presented based on the anaerobic power values in the 6 x 10 s and and 3 x 10 s period trials. Future studies should consider wheelchair acceleration and trunk function.

Keywords: evidence-based classification, cluster, Paralympic

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Interrelationship among muscle fitness in childhood and bone mineral density in adulthood: mediation analysis of muscle fitness in adulthood

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1094

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Introduction: To examine the relationship between muscular fitness indicators (MFI) in childhood and bone mineral density (aBMD) in adulthood.

Methods: 138 adults were followed from the age of 6-12 years. Height, body mass, and MFI (hand grip strength, standing long jump and sit-ups) were assessed in childhood and adulthood. DXA was used to estimate aBMD (GE Healthcare, Lunar DPX-NT).

Results: Males showed advantages compared to females regarding MFI in childhood and adulthood, and also in aBMD in adulthood, except for lumbar spine ($p < 0.05$). Regression analysis adjusted for sex, age, and BMI z-score in childhood revealed that some MFI in childhood showed positive relationship with bone health indicators (BHI) in adulthood: HS and total body aBMD ($\beta = 0.005$; $R^2 = 0.35$; $p < 0.05$) and upper limbs aBMD ($\beta = 0.005$; $R^2 = 0.55$; $p < 0.05$); and sit-ups as significant predictors of lumbar spine aBMD ($\beta = 0.003$; $R^2 = 0.06$; $p < 0.05$). Mediation analysis pointed out adulthood HS as a mediator of the relationships between childhood HS and total aBMD [indirect effect (IE) = 0.0025; 95%CI = 0.0005-0.0048], upper limbs aBMD (IE = 0.0040; 95%CI = 0.0017-0.0069). No mediator effect (indirect effect) was observed between childhood sit-ups with lumbar spine BMD.

Discussion: Other studies investigated mediator variables in similar relationships (Torres-Costoso et al., 2015) and identified lean mass mediation in the relationship of muscle fitness on bone health in schoolchildren. Vicente-Rodríguez et al. (2008) found a mediator effect of lean mass in the relationship between EUROFIT battery and bone mass among adolescents.

Conclusions: Muscular fitness in youth may be an important determinant of aBMD in adulthood.

Keywords: muscular fitness indicators, bone mineral density, bone health indicators, handgrip strength

References: Torres-Costoso, A., Gracia-Marco, L., Sánchez-López, M., García-Prieto, J., García-Hermoso, A., Díez-Fernández, A. and Martínez-Vizcaíno, V., 2014. Lean mass as a total mediator of the influence of muscular fitness on bone health in schoolchildren: a mediation analysis. *Journal of Sports Sciences*, 33(8), pp.817-830.

Vicente-Rodríguez, G., Urzanqui, A., Mesana, M., Ortega, F., Ruiz, J., Ezquerra, J., Casajús, J., Blay, G., Blay, V., Gonzalez-Gross, M. and Moreno, L., 2008. Physical fitness effect on bone mass is mediated by the independent association between lean mass and bone mass through adolescence: a cross-sectional study. *Journal of Bone and Mineral Metabolism*, 26(3), pp.288-294.

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The effects of physical activity and exergaming on motor skills, executive function in children with autism

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1106

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Introduction: This study examined the effects of physical activity (PA) (SPARK) and exergaming (Kinect), on motor skills (MS), and executive function (EF), in children with autism (ASD).

Methods: 60 children were randomly assigned to three groups of 20 children: SPARK, Kinect, or control. Children's MS and EF were assessed by Movement Assessment Battery for Children-2, and Wisconsin Card Sorting Test before and after the intervention. The SPARK and Kinect groups underwent an 8-week intervention. Repeated-measures ANOVA was analysis method.

Results: For MS, a significant group X time interaction was observed for ball skills; the SPARK group improved significantly from pre- to post-test compared to the other groups. For EF, a main effect of group was found for correct responses. The Kinect group showed more correct responses than the other two groups. A main effect of time was significant for conceptual responses and perseverative errors.

Discussion: Structured PA that targeted specific MS improved motor function in children with ASD, exergaming could be effective for improving EF but may not provide adequate opportunities for MS development (Fang et al., 2019). To improve gross motor function outcomes, PA interventions should be 16 hours or longer (Ruggeri et al., 2020).

Conclusions: Future research is needed to untangle the interaction between the type of exercise, traditional PA versus exergaming, and dose related with progress in MS, EF in children with ASD.

Keywords: exergaming, motor skills, executive function

- References:** Fang, Q., Aiken, C. A., Fang, C., Pan, Z. (2019). Effects of exergaming on physical and cognitive functions in individuals with autism spectrum disorder: A systematic review. *Games for Health Journal*, 8(2), 74-84.
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Learning from research on disability, physical activity, and social work in the UK

Theme: Physical Activity and Exercise for Health and Well-being

ID: 943

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Introduction: In the UK, like in other countries, many disabled people are not as active as they would like to be, or as physical activity recommendations suggest they should be. One way of changing this is by ensuring that personalised physical activity messages reach individuals living with different impairment types. Typically, it is health care professionals who have conversations about physical activity. Recently, disabled people have identified another professional group. That is social workers. However, social workers are not formally trained in physical activity messaging. In this context, a co-produced project called ‘Moving Social Work’ was designed to train social workers on how physical activity can be used to support the health and wellbeing of people experiencing disability in the UK.

Methods: In the present paper, we focus on the first stage of the Moving Social Work project. Throughout this stage, we generated an appropriate evidence base to inform the development of a training programme prototype for social workers.

Results: Three research studies were sequentially conducted: a scoping review, a Delphi study, and a follow-up interview-based study.

Discussion: In our oral presentation, we will explain how and why these studies complement each other. We will also comment on the role that our co-production partners played throughout. Finally, we will share the empirical and methodological lessons we have learned during the first stage, how they are shaping the next stages of the project, and what this might mean more broadly for adapted physical activity health and social science research.

Conclusions: The insights produced from the Moving Social Work project allow us to explore key topics in research on physical activity, health and wellbeing.

Keywords: disability, physical activity promotion, social care, health care, education

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Effects of multicomponent exercise training program on body composition and lower limb strength in individuals with intellectual disability

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1111

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Introduction: Population with intellectual disabilities (ID) is highly vulnerable and in the aging process they struggle with physical, psychological and affective changes and are prone to inactivity and isolation (WHO, 2011). Evidence supports the benefits of exercise, however few information exists in moderate/severe ID. We aimed to explore the effects of multicomponent exercise programs, with different approaches to aerobic training, in body composition and lower limb strength in adults with moderate/severe ID.

Methods: 24 participants (16.6% women) with 50.5 (± 7.4) years were divided into 3 groups and submitted to a multicomponent training program 3x/week for 6 months. Protocols differed between groups in the aerobic component, either performed continuously or intermittently. Body composition was measured through bioimpedance, lower limb endurance using 30sec Chair Stand Test and Maximal isometric strength of knee extensor/flexor muscles in a knee flexion/extension machine connected with a strength sensor with specific software for analyses (Chronojump v.1.9.0)

Results: Results showed a beneficial effect of the exercise program in BMI, %fat mass and in %fat free mass. Improvements in lower limb peak torque flexion was found in the intermittent aerobic training group.

Discussion: Contrary to our expectations, there were no differences in extension or muscular endurance, perhaps due to the small sample size. Our findings suggest that adults with moderate/severe ID are able to respond positively to multicomponent training with the potential to benefit body composition and some components of lower limb strength, preventing the decrease in lower limb enduring strength known for its association with functionality, autonomy and risk of falls.

Conclusions: More research is needed as physical exercise may have clinically significant impact in lives of people with ID.

Keywords: physical activity, Down Syndrome, aging

References: WHO, World Health Organization. (2011). *World Report on Disability*. World Health Organization.

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Effects of aquatic therapy on function and enjoyment in children with cerebral palsy: A pilot study

Theme: Physical Activity and Exercise for Health and Well-being

ID: 999

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Introduction: The inclusion of aquatic therapy (AT) programs in schools, may be beneficial as aquatic exercise can provide a fun and motivating form of physical activity, supporting the physical, social and emotional well-being of children and youth with Cerebral palsy (CP). The aim of the study was to evaluate the level of function and enjoyment in children with CP after participating in AT classes.

Methods: A total of 10 children took part in this pilot, of which 9 completed the a 8-months aquatic exercise program based on Halliwick concept (Lambeck & Gamper, 2011). Children had multiple impairments. The program consisted of exercises focusing on mental adjustment, movement and breathing control in the water. The outcome measurements were Water Orientation Test Alyn (WOTA 1) and an original enjoyment questionnaire. The Wilcoxon signed-rank test for related samples was used to compare variables of individual WOTA 1 test pre-post intervention (the effect size was determined by calculating the r).

Results: There was statistically significant improvement in 6 out of 13 trials of WOTA 1 with large effect size ($r > 0.5$): general mental adjustment, entering pool from pool edge, blowing bubbles in the water, side floating with instructor's help, back floating with instructor's help and holding rope. All participants declared they like being in the swimming pool and that classes are "fun and cool".

Discussion: In the future, in order to improve the efficiency of the AT program, an increase in the frequency of activities to twice a week might be considered.

Conclusions: Halliwick Concept can be effectively used in children with CP to improve body position control and mental adjustment in water. What is also important participation in AT classes was described by the children as cheerful, easy, and indicated as the favorite form of physical activity offered by the school.

Keywords: Halliwick concept, aquatic exercise

References: Lambeck, J. & Gamper U. (2011). "The Halliwick Concept." In *Comprehensive Aquatic Therapy*. Pullman Publishers.

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Reflections on the use of the Knowledge Café approach: lessons from research on disability, physical activity, and social work in the UK

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1014

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Introduction: Disabled people in the UK typically engage in less physical activity than non-disabled people, with physical inactivity being a prominent factor into increases in sedentary behaviour and long-term health conditions. One approach to encourage physical activity behaviour change has been to up-skill health professionals to communicate physical activity messages during patient consultations. However, disabled people have identified social workers as another professional group who could act as key messengers of physical activity promotion. As yet, social workers receive no formal physical activity training in the UK social work curriculum. To support this, a co-produced project called ‘Moving Social Work’ was devised to educate social workers on how to promote physical activity opportunities for disabled people to increase individual health and wellbeing. In this paper we focus on the second stage of this ongoing project.

Methods: Working with disabled people, social workers, and other relevant stakeholders, we engaged in a series of knowledge cafes to review and refine the development of an evidence-based training prototype. Throughout this stage we adopted guiding co-production principles whereby café participants constructed the design of both virtual and in-person knowledge café protocols and the development of training resources.

Results: In our oral presentation we discuss the opportunities, drawbacks, and challenges of using knowledge cafes as a vehicle for co-production within disability, physical activity, and social work research.

Discussion: Furthermore, we deliberate whether knowledge cafes can, or should, adhere to the boundaries of traditional qualitative methods of inquiry.

Conclusions: Finally, we share the empirical development of these training resources and how this informs future project stages, alongside methodological reflections of adopting knowledge cafes in adapted physical activity and health research.

Keywords: co-production, exercise, world cafe, health promotion

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Predictors to find physical activity hobbies among children and adolescents with disabilities

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1037

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Introduction: Children and adolescents with disabilities (CAWD) face many barriers to participate in organised sports. Peer support to mentor CAWD to take part in sports has been embedded into the personal adapted physical activity instructor (PAPAI) programme. The aim of this study was to investigate predictors to find a physical activity (PA) hobby as a result of the PAPAI programme.

Methods: Pooled survey data collected between 2016-19 from CAWD aged between 6-19y olds who enrolled in the PAPAI programme. CAWD completed online survey with parents about their levels of PA before they started the programme and evaluation questions such as number of sessions, meeting with the PAPAI, and perceived increased in PA. Blockwise binary logistic regressions were performed to determine the predictors to find PA hobbies.

Results: Almost 1000 CAWD applied to take part in the PAPAI programme between 2016-2019, and 43% (n=443) completed the feedback questionnaire. Three quarter respondents were male (74%) and 59% were children of primary school age (6-11y). More girls reported perceived increases in PA than boys ($p=-.024$) and 42% of CAWD reported to have found a hobby. In the final prediction model (adjusted for age, gender, enrolment year), participation in 5 or more sessions (OR=2.66, CI=1.2-5.95), perceived increased in PA (OR=8.9, CI=5.3-14.9), 3-4 days (OR=1.8, CI=1.0-3.2), 5-6 days of PA per week (OR=2.7, CI=1.2-5.8) were statistically associated with finding a PA hobby compared to attending one session, no change in PA or 0-2 days of PA per week respectively.

Discussion: The PAPAI programme was effective to help to find a hobby, with almost half of the participants found a hobby. Key predictors for finding a hobby included a dose of at least 5 times with a PAPAI and some prior level of PA.

Conclusions: The PAPAI programme has reached many CAWD through a peer support mechanism. This empowering programme can lead to perceived increases in PA, and further evaluation are needed.

Keywords: peer mentor, organised sport, PAPAI

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Sport participation for people with disabilities: exploring the potential of reverse integration and inclusion through wheelchair basketball

Theme: Inclusive Physical Education

ID: 1009

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Introduction: Reverse integration is defined as the integration of able-bodied people into disability sport. For decades, there has been a movement towards integrating people with a disability in mainstream society. Turning that philosophy into reality has proven challenging. Wheelchair basketball and the participation of able-bodied players in this sport seems to offer unique possibilities to further inclusion and enhance exercise motivation.

Methods: For decades, there have been movements towards integrating people with a disability in mainstream society has proven challenging.

Results: Findings revealed positive experiences of reverse integration from both able-bodied and non-able-bodied players and that it is a level playing field on court. All players valued the opportunity to play together. Health benefits were consistent across most disabled athletes, while able-bodied players reported the social attraction and the challenge of the unique dual-task nature of the sport and the skill involved. Conform the initial literature on reverse integration, players valued reverse integration because it helps to grow the sport locally, making up enough numbers for a team. Interestingly, most participants suggested that able-bodied players were not required at international level.

Conclusions: The findings support the premise of able-bodied involvement in wheelchair basketball to national level and extends our knowledge of the motivations of the athletes who play such an integrated sport. With its unique capabilities of hosting a range of (dis)abilities, this study can be used as an example to further develop inclusive opportunities in the field.

Keywords: inclusion, reverse integration, wheelchair basketball, motivational influences

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Spanish Olympic and Paralympic athletes' perceptions at the I Inclusive Sport Games 2020

Theme: Excellence in Disability Sport

ID: 1076

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Introduction: On October 7th, 2020, the I Inclusive Games 2020 were held in Madrid, a sporting event where Olympic and Paralympic athletes competed in an inclusive competition after Tokyo 2020 and sports were swimming, athletics, wheelchair basketball, badminton, rugby-7, taekwondo, judo, table tennis and triathlon. The objective of this study was to analyse the opinion of the participating athletes about the event.

Methods: An online questionnaire of 20 statements (to be assessed using a Likert-type scale with 5 options) were developed ad hoc, and was sent to all the 171 athletes, where safety, adaptations, equity in the contribution to the competition, respect to sport essence and context of full participation (as main conditions for competition) were assessed.

Results: 24% of the total number of athletes (n=41) answered and opinion about conditions was as follows: safety 4.85 (± 0.53), adaptations according to functional profile 4, 71 (± 0.61), equity in the contribution to the competition 4.64 (± 0.79), respect for the essence of sport 4.47 (± 0.91) and context of full participation 4.78 (± 0.51). When asking the mark from 1 (minus) to 10 (maximum) about their general opinion of the Inclusive Games, 8.49 (± 1.45) was obtained.

Discussion: Main Spanish sport institutions supported the event: Higher Sports Council, Spanish Olympic Committee and Spanish Paralympic Committee lead by Sanitas Foundation and 14 national sport federations. However, it was not an official competition, but given the results, a second edition will come.

Conclusions: The positive perception of the participating athletes is remarkable, which makes this event desirable in the future and that other sports are incorporated into its program.

Keywords: participation, elite sport, disability, inclusion

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Didactic and methodology aspect on the teach-learning and training process in paracanoe sport

Theme: Excellence in Disability Sport

ID: 1131

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Introduction: This study aimed to investigate the paracanoe coaches' conceptions about teaching technical skills, looking to determine the more important characteristics concerning the teaching methodologies to adopt in the process of teach-learning.

Methods: A qualitative approach was used, inquiring five international paracanoe expert coaches, first using an initial questionnaire, where were identify the perception of the trainers about the process of teaching Paracanoe and the methods and strategies used by each one, and then, a Focus Group interview, based in the initial responses and with a semi-structuralized guide. The analysis takes into account the diversity of professional background, including formal and non-formal learning, and professional academic experience, as the principal sources for access to technical knowledge.

Results: The information collected in the questionnaires, presented a total of 19 questions, distributed in 7 groups, exploring five domains - 1) sources of knowledge, 2) skills/competencies, 3) sequence of contents, 4) continuity of the coach and 5) physical condition training, addressing also issues related to demography, the training and experience of the participants and the sporting path as an athlete.

Discussion: The analysis of the questionnaires was made through the transposition to a written protocol of all the interventions of the coaches and the information obtained and submitted to a technique of Content Analysis, through the logical-semantic method, using the MAXQDA program. The main aspects considered, mentioned by the participating coaches, were summarized, and the realization of the Focus Group was very important and enlightening, regarding some responses and positions of the participants.

Conclusions: The lack of studies and specific theoretical and bibliographic support in the modality and involving the area of disability is confirmed. The lack of international homogeneity of concepts in the sport is evident, namely nomenclature and translation for each language.

The need for knowledge and specific training on disability in general is mentioned, although the pedagogical approach is similar.

Keywords: Paracanoe, kayak & canoe sport, sport disability, teaching-learning

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The Sport Empowers Disabled Youth 2 project

Theme: Inclusive Physical Education

ID: 1119

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Introduction: The Sport Empowers Disabled Youth 2 (SEDY2) project (2020-2022) encourages inclusion and equal opportunities in sport for youth with a disability by raising their sports and exercise participation in inclusive settings. This presentation introduces a basic-level online APA learning module for future sport professionals and volunteers.

Methods: The learning module is based on the focus group results, the practical materials and interventions created in the SEDY2 project. It consists of interactive videos, texts, digital quizzes and additional material for teachers.

Results: The learning module consists of introduction and five chapters: 1. Inclusion statements 2. Sporting opportunities for young people with disability 3. Making it fun and easy 4. Individualisation and communication 5. Inclusion in practice. The target is to help the student to understand the meaning of inclusion in sports and make them interested to learn more. There are additional materials for university teachers. The learning module is easy to use with self-correcting digital quizzes. The scope has not defined and duration takes only 2-3 hours.

Discussion: It is a promising tool for future sports professionals by providing an easy and free-of-charge learning opportunity for anyone interested in adapted physical activity, inclusion, and volunteering. No previous studies are required.

Conclusions: The learning module is an easy, practical and accessible, tool for the future sport professionals and volunteers. All videos of the learning module will be available in September 2022 by <https://www.inholland.nl/sedy2> and <https://www.sporteducation.eu>

Keywords: inclusion, physical education, adapted physical education, online learning

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Protocol of participatory action research for the development of an active school in Germany

Theme: Physical Activity and Exercise for Health and Well-being

ID: 955

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Introduction: Since particularly children and young people *with an ID* are inactive (Wouters, Evenhuis & Hilgenkamp, 2019), the promotion of their health mainly depends on the increase of their everyday activity (Kapsal, Dicke, Morin, Vasconcellos, Maïano, Lee & Lonsdale, 2019). However, meta analyses show that interventions addressing this subject only lead to moderate or no effects with regard to the physical activity of children and young people with ID (McGarty, Downs, Melville & Harris, 2018). Thus, it seems more promising to follow a systemic approach to create an environment for these young people which is more conducive to physical activity (Haveman & Stöppler, 2014). Although school is one of the first settings where *all* children and young people with an ID can easily be achieved, until now it has rarely been used to increase everyday physical activity in Germany (Walther & Römisch, 2019).

Methods: The study supports the development of a school in Bavaria/Germany to an ‘active school’ by means of a community-based participatory research design. The goal is to work out and implement a school concept promoting physical activity together with *all* members of the school family (including students). But there is a lack of science reports about participatory research with children or youths with ID. With reference to Habermann-Horstmeier’s *Public Health Action Cycle* (2018) the participatory development of schools continuously addresses the working steps of (1) defining the problem, (2) formulating goal(s) and strategies, (3) implementing and evaluating processes and results. Because of the participatory method this is an open not predictable process which should be evaluated by using adapted questionnaires and (group-)interviews which are analysed by means of content analysis.

In this study, the evaluation of the results includes the measurement of everyday physical activity at school (pre-post-test-design) by means of pedometers (Beets, & Pitetti, 2011) and the German motor test (Bös, 2017), which is *the* standardized test battery in Germany for measuring the physical fitness of 6 to 18-year-old young people.

Handling of unexpected events: A census ($N \approx 240$) of all pupils with ID was planned for May 2022, including the external classes who are located in regular schools. But the schedule had to be postponed as the head teacher does not want to overwhelm the teachers who are stressed by the pandemic. So the pre-test and the initiation of the “active school development” by videoclips will be in October. To check the feasibility of the test-items the pilot of the DMT test could be realized in the end of March with 12 pupils.

Keywords: participatory action research, (active) school development, Active School

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From learning to leading: Experiences of inclusive practitioners from university to applied practice

Theme: Inclusive Physical Education

ID: 959

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Introduction: Opportunities for equitable participation in sport and exercise are markedly lacking in the disabled community. One reason may be the lack of formal support and education practitioners receive. The University of Worcester has developed an inclusive pathway to create confident and effective practitioners, but the impact of these individuals is yet to be explored. The purpose of this research was to explore how practitioners were informed by their training at university, and what is required to improve current training for future disability practitioners.

Methods: Ten graduates were interviewed regarding their experiences at university and inclusive career. Data were then subject to narrative analysis.

Results: Though participants lived different stories, there were communalities in their narratives regarding how they created new opportunities for sport and exercise, and the various barriers they encountered trying to do so. For example, relationships with lecturers changed to colleagues as both graduates and their former educators supported each other to create more equitable opportunities for sport and exercise. Regardless of their sport or area of work, participants highlighted ableism as the key reason why disabled people are excluded from sport and exercise with increasing political and structural changes increasing the difficulty to create a long term legacy of equitable participation.

Discussion: Higher Education institutes must ensure they are training future practitioners for the very real, contemporary challenges of creating sport and exercise opportunities in an ableist society, rather than a tokenistic idea of disability sport.

Conclusions: Training confident, informed and driven practitioners can be a catalyst for equitable participation in sport and exercise, but increasingly ableist structures make this task more and more difficult.

Keywords: inclusion, higher education, training, practitioners

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A proposition for cultural praxis in disability research: Seeking socially-just agendas for inclusive physical activity

ID: 1100

Theme: Inclusive Physical Education

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Introduction: There have been increasing calls within the field of critical disability studies to move beyond an ethnocentric, Global North lens, especially when doing inclusive work in countries that have historically been oppressed by such cultures (e.g. Goodley, 2017; Meekosha, 2011). Global South and Postcolonial Disability Studies have advanced conversations and understandings of disability and how to do emancipatory research, but we argue these lenses are far too wide to do meaningful, socially-just research in specific countries. Instead, an approach focusing on more local, country specific cultures is required to truly anchor agendas of social justice within the unique contexts they are lived. We developed such an approach to craft a socially-just research agenda for inclusive PE in Japan.

Methods: We adopted a cultural praxis paradigm, did a scoping review of all English and Japanese language documents on inclusive PE in Japan, conducted a reflexive thematic analysis on the data set and applied analytical lenses of cultural and critical disability studies to create this socially-just agenda.

Results: We learnt much from this process and will share our reflections, processes and lessons learned from developing this novel, pluralistic approach.

Discussion: We hope this approach can be applied in countries across the world to create meaningful, inclusive change in culturally specific and sensitive ways to achieve cultural praxis and social justice.

Conclusions: While we present our process in the context of Japan, we believe that such an approach can be used as a guide to support researchers seeking to do culturally specific and sensitive, socially just work in inclusive PE.

Keywords: social justice, cultural praxis, critical disability studies, inclusive PE

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Relationship between physical fitness and cognition in males with intellectual disability

Theme: Physical Activity and Exercise for Health and Well-being

ID: 988

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Introduction: Numerous studies have evidenced that physical fitness (PF) and practising exercise are positively related with better cognitive abilities among different populations. However, very few research has focused on people with intellectual disability (ID). The aim of this study was to determine the correlation between intelligence quotient (IQ) and factors related to PF in healthy male adults with ID.

Methods: 47 males with ID (39 ± 10 yr) participated in a multicentre cross-sectional study. IQ was obtained by the K-BIT test while PF was assessed using tests from the SAMU DIS-FIT Battery: body mass index, handgrip strength (HGS), leg strength (LS), abdomen strength (ABS) and physical endurance (PE).

Results: IQ was found to be statistically correlated to HGS ($r = .56$) and LS ($r = -.42$). Statistical differences were also found between mild and moderate ID in HGS, LS and ABS, with a medium size effect.

Discussion: These results are in line with previous studies that positively correlated cognition with HGS in individuals with mental disorders (Firth et al., 2018), and LS in people without ID (Steves et al., 2016).

Conclusions: The study results evidence relationships between muscular strength and cognition in participants. Future research must inquire into the influence of aerobic and strength exercise into cognition in people with ID.

Keywords: intellectual quotient, strength, health

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Is type of disability a key factor for inclusion in the Physical Education classes?

Theme: Inclusive Physical Education

ID: 991

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Introduction: Attitudes of partners are crucial to achieve the total inclusion of students with disability in Physical Education (PE) classes. As there are different types of disability with a wide variety of characteristics, it could be logical that these attitudes might vary according to disability. However, there is no research on this question. This study pretended to compare the students' attitudes towards two different disabilities.

Methods: In this observational study 215 students (112 females; 14.39 ± 1.39 yr) completed randomly one of two questionnaires targeting two types of disability, visual disability (VD) and intellectual disability (ID). Both questionnaires had the same structure and were validated.

Results: Significant differences between attitudes towards VD and ID are shown (Cohen's $d = 0.33$). According to sex, attitudes towards general disability also presented statistical differences ($d = 0.25$). Finally, student age was found to be negatively correlated to attitudes in general ($r = -.28$).

Discussion: This study shows that students without disabilities have a better attitude towards VD than ID. It might be due to the fact that VD is easier to simulate and empathise with. In concordance with previous studies, girls showed a better attitude than boys.

Conclusions: Student attitudes towards inclusion can vary in function of the type of disability. Therefore, PE teachers must consider the type of disability and its characteristics when proposing interventions that aim to change positively attitudes of students without disabilities towards inclusion.

Keywords: visual impairment, intellectual disability, attitudes

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A qualitative approach to the opinion of in-service physical education teachers on the inclusion of students with disabilities: what do we know and what do we need?

Theme: Inclusive Physical Education

ID: 970

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Introduction: To “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” has become a massive challenge to achieve by 2030 by redesigning education policies (SDG 4, UNESCO, 2017). Specifically, in Physical Education (PE), PE teachers’ role seems to be crucial, since they are in charge of promoting inclusion in their particular context. The declared purpose of this research was to analyse the insights of in-service PE teachers about inclusion of students with disabilities (SWD) in Spain.

Methods: A total of 14 in-service PE teachers during 2020-2021 academic year participated in this study. All participants were recruited from educational centers in Madrid and should had to be enrolled in the Inclusive Sport at School (ISS) program, which main goal is to promote inclusion in PE settings (Pérez-Tejero, et al., 2013). To collect information, four different semi-structured focus groups were conducted, lead by a qualitative expert researcher. For the design of the interview a review of the literature was conducted (Block et al., 2020). All the focus groups were transcribed into Word and analysed using the NVivo Pro 12 software.

Results: Qualitative data showed that a large part of teachers manifest a lack of pre-service training to include SWD in PE, and they highlight how this initial academic preparation should be presented to future PE teachers. Besides, the ISS program has apparently been a great support to increase their competence and some barriers and facilitators for inclusion are also revealed by participants.

Discussion: The lack of teacher preparedness to include students with disabilities in PE classrooms appears to be a widespread global trend, not only in Spain.

Conclusions: The development of specific in-service teacher training is required in order to better improve PE teachers’ capability to include the great heterogeneity of students present in regular school settings.

Keywords: students, disabilities, adapted physical activity, inclusive education

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Physical activity intention and attendance behaviour in Finnish youth with cerebral palsy- results from a physical activity intervention: An application of the Theory of Planned Behaviour

Theme: Physical Activity and Exercise for Health and Well-being

ID: 934

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Introduction: Physical activity is associated with better health in individuals with cerebral palsy (CP) (Wright et al., 2019). Numerous physical activity interventions have been designed to promote physical activity among youth with CP (Stribling et al., 2017). No previous studies have explored the factors contributing to the intention to participate and predicting attendance behaviour for these interventions. Using theory of planned behaviour (TPB) (Ajzen, 1991), this study explored the prediction of physical activity intention and attendance behaviour in a physical activity intervention aiming to promote physical activity in a sample of young individuals with CP.

Methods: Males with CP aged 9-21y were asked to complete measures of attitude, subjective norms, perceived behavioural control and, intentions towards a physical activity intervention. Participants had no cognitive impairments to understand and follow instructions, were categorized into GMFCS I-III, did not receive any specific lower limbs' medical treatment, or did not participate in a strength training program for lower limbs within six months before the study.

Results: Subjective norms were found to be the only significant predictor of intention, accounting for 83% of variance in intention.

Discussion: The findings of this study support the use of the TPB to understand the factors influencing intention in physical activity interventions for youth with CP.

Conclusions: The results show that TPB is a relevant tool in the prediction of intention towards a physical activity intervention in Finnish youth with CP.

Keywords: exercise, intention, motor skills disorders, motivation, patient compliance, attitude to health

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Open Doors project facilitates disability inclusion in mainstream sports clubs

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1026

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Introduction: The goal of the Open Doors project (Avoimet Ovet in Finnish) is to increase the number of adapted hobby options in mainstream settings by providing support for including people with disabilities (PWD) in their activities. The project is coordinated by the Finnish Paralympic Committee and executed with 73 pilot clubs, 8 national sports specific federations and 14 regional sports federations.

Methods: Inclusive ideas have been compiled on an Open Doors website in a sports club friendly manner. The clubs engage in rural sparring activities, meetings and trainings. The current status of sport clubs, nature of their activities for PWD, and need of support were examined via online survey in 2020. A related survey for PWD was conducted to find out their interest to participate in local sports clubs.

Results: Out of 314 sport clubs 66% report that they have activities for PWD, which shows 17% increase compared to earlier. Their biggest challenges are lack of instructors and volunteers, facilities and finances, and lack of participants. Out of 1203 PWD 20% report that they are already involved, and 25% would be willing to participate in a local sports club. However, the sports should be appealing and PWD must feel that they are welcomed.

Discussion: Sports clubs need to take steps to actively remove barriers to PWD joining in. Local networks between sports clubs are important platforms for learning and co-operation.

Conclusions: Disability inclusion at the local level sports doesn't happen by itself. Municipalities can accelerate the change by directing subsidies for well-performing clubs, providing accessible facilities and supporting local adapted physical activity networks. As a response to sports clubs' wishes an inclusion handbook is going to be published.

Keywords: inclusion, mainstream sports, sports clubs, disability sports, parasports

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Understanding the coach-athlete relationship in sports for athletes with and without Intellectual Impairment through coaches' voice: A qualitative inquiry

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1132

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Introduction: Athletes' motivation, coaching practices and coaches' motivation are related and influence athletes' sports participation. However, these variables have rarely been studied in sports for athletes with Intellectual Impairment (II). This study aims to i) explore exercise motivation differences between athletes with and without II and investigate ii) coaching practices and motivation differences between their coaches.

Methods: Coaches who coach: i) athletes with II (n=11), ii) athletes without II (n=13) and iii) both groups (n=2) were involved in semi-structured interviews. Transcripts were analysed using an inductive thematic analysis, a method that allows authors to provide an analysis of patterns across the data set.

Results: Three themes were identified for the exercise motivation of athletes with II (Sport-related Progression, Social Interaction, Positive Emotions), two for their coaches' motivation (Help others, Love the Sport) and five for the coaching practices towards athletes with II (Provide Sport Opportunities, Adapt their Behaviour, Develop Life skills, Build Rapport, Avoid Negative Consequences). Coaches of athletes without II reported extra themes about their athletes' motivation (Health-related Reasons), their coaching motivation (Professional Development) and their coaching practices towards their athletes (Sport Performance Progression).

Discussion: Despite the motivation of athletes with and without II to progress in their sport, only coaches of athletes without II focus on athletes' sports performance progression. This could indicate that the coaching practices are influenced less by the motives of athletes with II. Moreover, coaches of athletes with II are coaching their sport for inherent reasons and adopt a mentor rather than a sport-coaching role.

Conclusions: In summary, the paper tried to shed some light on the appropriate coaching practice adaptations that are required to facilitate the sport participation of people with II.

Keywords: motivation, coaches

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Coaches' interpersonal styles and the motivational differences between athletes with and without intellectual impairment

Theme: Physical Activity and Exercise for Health and Well-being

ID: 951

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Introduction: The social environment is instrumental in promoting athletes' exercise motivation. However, its role in motivation of athletes with Intellectual Impairment (II) has been understudied. Thus, this study aims to examine exercise motivational differences between athletes with and without II, coaching styles (dis)similarities between their coaches, and how coaching styles might predict athletes' motivation.

Methods: Coaches of athletes with (n = 122) and without II (n = 144) completed the Interpersonal Behaviours Questionnaire and the Revised Sport Motivation Scale. The level of significance for the statistical analyses (rank MANOVA and Additive Nonparametric Regressions) was set at $p \leq .05$.

Results: The results showed that autonomous motivation is significantly lower and controlled motivation is significantly higher in athletes with II. Moreover, there are no differences between athletes' amotivation, and coaches' need-supportive and need-thwarting style. The results showed also that need-supportive coaching style predicts autonomous motivation in athletes with and without II. It also predicts lowered amotivation in athletes with II. Additionally, need-thwarting coaching style predicts amotivation in athletes with and without II, and lowered autonomous motivation in athletes without II.

Discussion: The coaching style similarities may be due to the same coaching education background of the two groups. Moreover, the practices utilised in exercise for people with II could explain why they adopt more controlled types of motivation. From the results it seems also that athletes with II have the ability to recognise different coaching styles and respond accordingly.

Conclusions: In summary, the findings of the paper about the coaching styles and their role in athletes' motivation, highlight the importance of the coach-athlete relationship and the necessity for stakeholders to further support sports development of people with II.

Keywords: sports, self-determination theory, social environment

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Development of social competence in physical education: A proposal from sport education and service-learning using sitting volleyball

Theme: Inclusive Physical Education

ID: 1118

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Introduction: With the purpose of moving towards a more inclusive society, it seems necessary to favor and develop social competence (SC) from the school-based programs. The aim of this study was to examine the effect of an integrated Sport Education (SE) and Service-Learning (SL) program using sitting volleyball on participants' SC.

Methods: A pre-experimental study of repeated measures was designed. 80 students (mean age $14.06 \pm .62$) participated in the study. Students participated in a program that use sitting volleyball as adapted sport and combined SE and SL program. To assess SC, a questionnaire was used.

Results: Pre-test scores showed that girls had significantly higher values than boys in three factors of SC: prosocial behavior, social efficacy and normative adjustment. In relation to the effectiveness of the program, data presented a positive trend of improvement in SC, however significant differences were only observed in social adjustment. On the other hand, and according to gender, it was found significant differences in normative adjustment for boys, while no significant differences were observed for the girls.

Discussion: This study reinforces the idea that methodologies such as SE and SL facilitate and reinforce the development of SC (Bessa et al., 2019; Chiva-Bartoll et al., 2019). The importance of adapted sport should be further investigated.

Conclusions: Develop adapted sport programs supported by centered-student approaches could improve students' SC.

Keywords: centered-student approaches, adapted sport

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Movement behaviours are associated with metabolic health markers in working adults: a cross-sectional analysis

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1028

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Introduction: Full-time working adults spend a large amount of their day being sedentary and with insufficient amount of moderate-to-vigorous physical activity (MVPA) (Prince et al., 2019). This is particularly troubling since sedentary behaviour (SB) and insufficient MVPA have been considered important predictors of metabolic disorders, including obesity, insulin resistance, and type 2 diabetes (Eaton & Eaton, 2017).

Objectives: To objectively assess SB, light physical activity (PA), MVPA, step counts, and their association with metabolic health outcomes among sedentary workers.

Methods: Forty-two participants (47.52 ± 7.74 years old; BMI: 28.49 ± 4.11 kg/m²) of both genders completed this study. Waist circumference was assessed twice using a flexible steel tape (Hoechstmass-Rollfix, Germany). Daily PA levels, step counts and SB were monitored using the triaxial accelerometer wGT3X-BT (ActiGraph®, Florida, USA) worn for 7-consecutive days; those with valid data (≥ 3 days with ≥ 600 min of wear time per day) were included. The blood samples were taken after 12-h overnight fast; serum samples were used to determine total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C), triglycerides (TGs), glucose, and insulin. Low-density lipoprotein cholesterol (LDL-C) as calculated as $(TC - HDL-C - (TGs/5))$. The homeostatic model assessment of insulin resistance (HOMA-IR) was also calculated as $(\text{insulin } [\mu\text{U/L}] \times \text{glucose } [\text{mg/dL}] / 405)$. Descriptive statistics were performed for all variables. Spearman's rank and Pearson's coefficients were used for bivariate correlations analysis.

Results: The results showed that light PA (min/day) was inversely associated with fasting glucose ($r = -0.355$, $r^2 = 0.126$, $p = 0.021$). MVPA (min/day) was inversely associated with triglycerides ($r = -0.359$, $r^2 = 0.004$, $p = 0.020$), insulin ($r = -0.511$, $r^2 = 0.165$, $p = 0.001$), and HOMA-IR ($r = -0.345$, $r^2 = 0.079$, $p = 0.025$). Lastly, daily steps counts was inversely associated with fasting insulin ($r = -0.432$, $r^2 = 0.154$, $p = 0.004$) and HOMA-IR ($r = -0.380$, $r^2 = 0.160$, $p = 0.013$). SB was not associated with any metabolic health marker ($p \leq 0.05$).

Discussion: The results suggest the association between light PA, MVPA, step counts and metabolic health markers in working adults. Prospective studies should identify causal relationships.

Keywords: insulin resistance, metabolic disorders, sedentary, accelerometry

References: Prince, S.A., Elliott, C.G., Scott, K., Visintini, S., & Reed, J.L. (2019). Device-measured physical activity, sedentary behaviour and cardiometabolic health and fitness across occupational groups: a systematic review and meta-analysis. *International Journal of Behavioral Nutrition and Physical Activity*, 16(30).

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Evolving reflective competence in the context of diversity among prospective physical education teachers

Theme: Inclusive Physical Education

ID: 1095

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Introduction: This article focuses on the evaluation of a course concept in order to prepare PE teachers for inclusive physical education based on a broad understanding of inclusion. In particular, the analysis focuses on the development of students' reflective competence.

Methods: Framed by the Design-Based-Research approach, a theory-practice seminar was designed, which is theoretically based on the recommendations of the "TE4I" project. The Analytical Short Film (ASF) as well as the constant reflection of authentic lesson recordings represent methodological core elements. During the pilot phase, interviews were conducted with participants of the seminar. The content structuring content analysis according to Kuckartz (2018) was used for the evaluation.

Results: Initial results show positive attitude changes towards inclusive physical education as well as an evolved reflective competence of students, that can be attributed to the seminar. While students' views of challenges on the institutional level remain relatively unchanged by the seminar, they feel well prepared with regard to the future implementation of inclusive physical education. Especially reflection is assigned great importance in dealing with diversity.

Discussion: Statements about the development of the level of reflection cannot yet be made; for this, the reflection products must be evaluated in a content analysis in a further step.

Conclusions: In summary, practice sessions in particular are considered to be of great importance in reducing uncertainty in dealing with diversity. In addition, the constant reflection of authentic lesson recordings as well as the creation and discussion of an ASF is perceived as particularly helpful for the reflection process.

Keywords: reflecting skills, inclusive physical education, teacher education

References: Kuckartz, U. (2018). Qualitative Inhaltsanalyse. Methoden, Praxis, Computerunterstützung. Weinheim: Beltz Juventa.

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Understanding the impact of online training during the lockdown due to COVID-19 among athletes with disabilities

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1075

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Introduction: COVID-19 pandemic led to huge restrictive worldwide measures, such as the suspension of training, especially for athletes with disabilities, who, due to the associated comorbidities, are more susceptible to this condition. To reduce the impact of isolation and maintain the quality of life of the athletes, FC Porto conducted online training during lockdown. This study aims to evaluate general perception of the role of FC Porto, training sessions motivation and its impact on the well-being of the athletes.

Methods: A specific questionnaire was designed by FC Porto's health department, answered voluntarily by athletes who compete, or by their tutors.

Results: We collected 56 answers (average age was 25 years), 30 from the swimming team, 13 from table tennis, 7 from boccia and 6 from goalball. 74% of the athletes always or almost always felt like performing the online training sessions and fulfilled the proposed plans. However, only 50% felt fulfilled after performing the workouts. Although 57% of the athletes felt concerned about their performance, 70% continued to believe in their abilities. 79% never, almost never or only sometimes felt fatigue daily, and 71% felt no loss of strength. 100% of the athletes consider that FC Porto played an active role in their lives during their confinement.

Discussion: FC Porto played a decisive role in the lives of their athletes. According to the results, most of the athletes were actively and repeatedly involved in online training sessions, which allowed for the reduction of the impact of lockdown in their personal and sportive lives.

Conclusions: Structured organizations, like the Adapted Sports Department of FC Porto, are essential to reduce risks and maintain performance on physical, social, and psychological levels.

Keywords: COVID-19, disability, training

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Web-based programs to increase physical activity participation among people with intellectual disability or autism: A systematic literature review

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1023

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Introduction: Web-based programs are increasingly recognized as an effective and scalable method of promoting physical activity (PA) among the general population. Children with autism spectrum disorders (ASD) and/or intellectual disabilities (ID) are particularly at risk of inactivity; especially in times of a pandemic. Interventions to increase PA that reach these specific populations in a sustainable way are needed. Computer- and web-based PA interventions are an appealing means to influence PA in (pre)adolescents (Hamel et al., 2011). However, their effectiveness has yet to be determined in populations with ASD and ID.

Methods: A systematic review is currently ongoing to investigate the effectiveness of web-based programs to increase PA levels in people with ASD and/or ID. Following the PRISMA guidelines, a systematic search of peer-reviewed literature was conducted across seven databases, to identify articles for full text review.

Results: The complete results of the systematic search will be available in April 2022. From an initial screening of 852 records, 22 studies were included for full-text review. Data were extracted from each study relating to study characteristics, intervention characteristics, and sample characteristics. Methodological quality was evaluated by two independent reviewers using quality indicators relevant to the type of study design.

Discussion: The effects of computer- or web-based interventions on increasing PA will be described along with the examination of additional components associated with computer or web-based interventions to increase success.

Conclusions: Computer- and web-based interventions can promote PA but further efforts are needed to demonstrate the effect for the use in specific populations such as people with ID and ASD.

Keywords: intellectual impairment, autism, interventions

References: Hamel, L.M., Robbins, L.B., & Wilbur, J. (2011). Computer- and web-based interventions to increase preadolescent and adolescent PA: a systematic review. *Journal of Advanced Nursing* 67(2), 251–268.

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Physical characteristics of para swimmers with cerebral palsy

Theme: Excellence in Disability Sport

ID: 1083

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Introduction: Planning and prescribing strength training to para swimmers with cerebral palsy (CP) requires specificity to meet the individuality training principle. Also, it is important to have baseline measures from the pre-season to assess progression/regression over the in-season. Therefore, this study aims to physically characterize para swimmers with CP through a battery of tests and measurements.

Methods: Three para swimmers with CP performed 3 trials of 6kg med ball throw, shoulder mobility test (SM), body mass, 4 girths (arm, waist, gluteal, calf), 8 skinfolds (subscapular, triceps, biceps, iliac crest, supraspinale, abdominal, front thigh, medial calf) and height were measured.

Results: Athlete A (33 years, female, spastic diplegia) presented the lowest mean value in med ball throw and athlete C (20 years, male, right side hemiplegia) the best. Athlete B (17 years, male, right side hemiplegia) presented the lower asymmetry in shoulder mobility, calf girth and in tricipital and medial calf skinfold. Athlete A had the highest asymmetry in tricipital, bicipital and front thigh skinfolds. Athlete C had the biggest asymmetry in shoulder mobility, arm, gluteal and calf girths and iliac crest, supraspinale and medial calf skinfolds.

Discussion: These results show that even though athletes have the same disability, it affects each athlete in different ways. One explanation for this can be the type of CP. We suggest that these athletes include both unilateral and bilateral multi-joint exercises in order to undertake strength asymmetries and avoid unconsciously preferring the less affected limb.

Conclusions: Evaluations in the pre-season help form the decision-making process of individual goals and prescribe strength training accordingly. More attention is needed in this process among CP para swimmers, not only to meet their individual needs, but also to fulfil their maximum athletic potential.

Keywords: Cerebral Palsy, para swimming

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Physical Performance of male and female wheelchair basketball athletes

Theme: Excellence in Disability Sport

ID: 1016

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Introduction: Wheelchair basketball (WB) athletes (WBA) must have speed, agility, endurance, power, strength, as well as technical tactical ability. Thus, this study verified the physical performance of Brazilian female and male WBA.

Methods: Twenty-four WBA (12-male/12-female) from Brazilian National Team were recruited. 20m-sprint-velocity test: four photocell gates were located at the starting and 20m along the course. Athletes positioned the wheelchair 0.5m behind the starting line and performed 2 sprints. The velocity(m/s) was calculated with the best sprint. Medicine ball test: athletes positioned the front wheels behind the line with a 5kg medicine ball and threw the ball as far as possible. Distance was measured in meters and used the best attempt of 3 throws. Statistical analysis used IBM SPSS 26 software. Kolmogorov-Smirnov test verified the normality. Data showed as mean±SD or median(range) for variables with normal and non-normal distribution, respectively. A comparison between groups was performed by Independent t-test and Mann-Whitney test when appropriate, with statistical significance of $p \leq 0.05$.

Results: In the 20m-sprint-velocity and medicine ball tests the values were, respectively, 13.7 ± 1.1 m/s and 6.3m(3.0) to male, and 12.2 ± 0.8 m/s and 4.3m(6.5) to female ($p < 0.001$).

Discussion: There are differences in physical performance of female and male WBA which should be considered by coaches when planning WB training.

Conclusions: Brazilian female and male WBA presented different performance in 20m sprint velocity test and medicine ball test.

Keywords: wheelchair basketball, performance

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Posters Presentations

Changes in bone turnover markers in males under maximum-intensity exercise

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1126

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Introduction: Physical activity is a major factor that affects bone remodelling and metabolism. The study evaluated changes of bone turnover markers in young males under maximum-intensity exercise.

Methods: The study involved 30 men aged 20–25 years, divided into two groups. The experimental group (n = 15) comprised individuals engaged in competitive endurance sports disciplines; the control group subjects (n = 15) did not train any sports. Nutrition was assessed by means of current recording and evaluation of selected somatic, physiological, and biochemical indicators. Somatic indicators were determined by using an AKERN BIA 101 body composition analyser. Aerobic capacity was examined with a graded treadmill test until subjectively perceived exhaustion. Blood samples for biochemical assays were collected before and 60 minutes after the test. Concentrations of the following bone turnover markers were evaluated: bone alkaline phosphatase (b-ALP), osteocalcin (OC), cross-linked C-terminal telopeptide of type I collagen (CTX1), procollagen I N-terminal propeptide (PINP), and vit D. These were determined with immunoenzymatic Methods (ELISA).

Results: Mean vit D concentration equalled 42.95 ng/ml in the experimental group and 35.63 ng/ml in the control group (p=0.012). After the max test, the experimental group exhibited a decrease in CTX1 by 1.1%, as well as an increase in b-ALP by 14.7%, in OC by 21.9%, and in PINP by 1.0%. In the control group, PINP increased by 1.4%, with a decrease in b-ALP by 36.0%, OC by 38.2%, and CTX1 by 2.2%. The dietary assessment showed no significant impact on the study results.

Discussion: There is a deficit of research in the literature on the set topic. It seems purposeful to conduct further research.

Conclusions: In trained individuals, a single bout of max-intensity exercise causes a decrease in bone resorption markers and an increase in bone formation markers. In non-trained participants, the opposite trend was observed.

Keywords: bone turnover, biochemical markers, physical activity

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Strength and conditioning interventions for adolescents with autism spectrum disorders: A scoping review

Theme: Physical Activity and Exercise for Health and Well-being

ID: 977

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Introduction: Individuals with autism spectrum disorders (ASD) engage in less physical activity (PA) compared to children without ASD. While the literature shows the impact of aerobic exercise, limited research has evaluated the effect of strength training for adolescents with ASD. The purpose of this scoping review is to identify the structure and efficacy of strength training interventions for adolescents with ASD.

Methods: Three researchers searched for relevant articles. Keywords for ASD and strength and conditioning were used in several databases including: Pubmed, CINAHL, SportDISCUS, Cochrane, Academic Search Premiere, Scopus, Science Citation Index Expanded and Emerging Sources Citation Index. Search results were screened based on inclusion and exclusion criteria.

Results: The results demonstrate that strength and conditioning programs can improve overall physical health for adolescents with ASD. The main biometric measures show increases in strength, balance, fat-free mass, and decreases in fat mass and weight circumference.

Discussion: The improved biometric markers caused by strength training programs can have various impacts, such as motor function improvements. Thus, strength training programs can be pivotal for adolescents with ASD.

Conclusions: The results of this study demonstrated that strength and conditioning programs can improve overall physical health for adolescents with ASD. This review justifies the need for strength opportunities for adolescents with ASD to increase overall PA levels and general health.

Keywords: autism spectrum disorder, strength and conditioning, exercise program, resistance training

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Fat pattern tracking during a Paralympic cycle: Implications for performance in cyclists with cerebral palsy

Theme: Excellence in Disability Sport

ID: 1081

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Introduction: There is a relationship between performance and body composition in non-disabled cyclists, but it has not yet been evaluated in para-cycling. This study aimed to monitor body composition (fat pattern by measuring skinfolds) in elite para cyclists with cerebral palsy (Spanish National Team) for four years (an Olympic cycle) to determine its influence on sports performance (e.g. medal-winning).

Methods: Two cerebral palsy cyclists (UCI classification MC2 and MT1) of the Spanish national adapted cycling team were evaluated in 19 different moments of the Olympic cycle (selection events and competitions: European and World Championships, and Paralympic Games). The anthropometric measurements were taken according to the International Society for the Advancement of Kinanthropometry (ISAK) procedures.

Results: During the Olympic cycle, obtaining a podium was related to reducing body weight (5.0%), fat percentage (3.0%), the sum of 8, 6 and 4 skinfolds (42.7, 43.9, and 38.9%, respectively), skinfolds of the trunk (39.3%), lower-body (43.6%) and upper-body (29.6%), and limbs/trunk ratio (from 0.89 to 0.79). Conversely, cessation in obtaining a podium and gradually performing worse times were related to increasing body weight (8.3%), fat percentage (1.7%), the sum of 8, 6, and 4 skinfolds (26.6, 25.7, and 28.0%, respectively), and limbs/trunk ratio (from 1.78 to 1.48).

Discussion: These findings provide a direction for future work, where the goal is to identify useful measurements of body composition (total and regional by skinfold) that can be used to estimate fat and lean muscle mass, and determine their impact on performance in para-cyclists with CP.

Conclusions: Changes in body composition were related to performance (obtaining podiums). This suggests that low body fat is critical in para-cycling performance in CP.

Keywords: anthropometry, body composition, fat percentage, skinfolds

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Maximum lactate accumulation rate in speed and persecution tests of track para-cyclists in Spanish national team selection events

Theme: Excellence in Disability Sport

ID: 1079

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Introduction: This work aimed to categorise the kinetics and maximal lactate accumulation rate ($\dot{V}L_{max}$) and its removal rate after a maximal time trial/persecution in the weeks prior to selecting athletes for the World Championships.

Methods: The sample included 23 track para-cyclists in Spanish national team selection events: amputees ($n = 5$) prosthesis; cerebral palsy ($n = 2$); neuromuscular disorders ($n = 4$); and 6 tandem (3 B3 and 3 B2 non-sighted riders and 6 sighted pilots). After days of training on track and standardized warm-up, they performed from standing their speed test* (1000 m in C1-C5) or pursuit (σ : 3000 m in C1-C3; 4000 m in C4-C5-B; φ : 3000 m in C1-C5-B). At 3, 5, 7, 10, and 15-20 min after completion, 0.2 μ l of capillary blood in the ear lobe were taken by a physician during active recovery ($\sim 30\%$ of maximum) for lactate analysis (Lactate Scout®), until one sample was lower than the subsequent sample.

Results: The $\dot{V}L_{max}$ (mmol/l), time (min) elapsed for determination, and removal rate ($(\dot{V}L_{max} - \text{subsequent lower value})/\text{min}$) were analyzed. The mean \pm SD values of $\dot{V}L_{max}$ in the 6 sprinters (15.05 ± 2.2) were 32.2% higher than in the 11 endurance (10 ± 1.6), in the 5 amputees (11.7 ± 4.6) it was 4% lower than in the 6 non-amputees (12.2 ± 3.2), in the 5 females (10.2 ± 1.1) it was 15.1% lower than in the 18 males (12.0 ± 3.1), and none of the differences were observed between non-sighted riders (11.4 ± 1.5) and sighted pilots (11.2 ± 2.6). Except in non-sighted riders where $\sim 50\%$ of $\dot{V}L_{max}$ was reached at 10 min, the $\sim >60\%$ $\dot{V}L_{max}$ was at 7 min ($\sim 30\%$ at 10 min) for sighted pilots and amputees, sprinters, endurance athletes, males and females. There was no difference in removal rate between the above categories.

Conclusions: In tests with maximum aerobic and anaerobic demands (1000 m: 64s = 56.25 km/h and 4000 m: 275 s = 52.34 km/h) it is relevant to establish differences in $\dot{V}L_{max}$ by sport classes to improve their training and performance.

Keywords: anaerobic test, gender, tandem, sprinters

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Physical education as a tool for inclusion: Impact of an awareness event in the attitudes of Portuguese students toward the inclusion of students with disabilities

Theme: Inclusive Physical Education

ID: 1068

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Introduction: It is well known that Physical Education and physical-sports activities can act as tools for inclusion. In this sense, Physical educators play a crucial role on inclusive education since they can develop competencies and improve the social commitment of the school community, particularly creating strategies for all students learning together regardless their abilities or differences. Therefore, this study aims to ascertain the impact of an awareness program on attitudes of Portuguese students toward the inclusion of peers with disabilities in Physical Education classes.

Methods: The participants were 33 students of a middle public school, 13 girls and 20 boys, with 14 years of age. The Portuguese version (Campos, Ferreira & Block, 2013) of the Children's Attitudes Towards Integrated Physical Education-revised - CAIPE-R (Block, 1995) was used.

Results: Results show significant differences between the students' attitudes before and after the program. Furthermore, differences were found for gender and for level of competitiveness.

Discussion: The outcomes of this study suggest that awareness programs have a positive impact on changing students' attitudes towards inclusion in Physical Education classes.

Conclusions: The implementation of this type of awareness events can be seen an opportunity to develop Service Learning projects that use physical activity and sport for social inclusion where teachers and students can learn together about the potentials and possibilities of different abilities.

Keywords: inclusion, physical education, attitudes, awareness program

References: Block, M. E. (1995). Development and validation of the Children's Attitudes Toward Integrated Physical Education—Revised (CAIPE—R) inventory. *Adapted Physical Activity Quarterly*, 12(1), 60–77.

Campos, M.J., Ferreira, J.P., & Block, M.E. (2013). An analysis into the structure, validity and reliability of the Children's Attitudes Towards Integrated Physical Education-Revised (CAIPE-R). *European Journal of Adapted Physical Activity*, 6(2), 29-37

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The Inclusive Physical Education Teacher Profile: an exploratory study

Theme: Inclusive Physical Education

ID: 1122

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Introduction: Little is known about the particularities and specificities that should characterize the physical education (PE) teacher who aims at inclusion in their classes (European Agency for Development in Special Needs Education (2011). Thus, this exploratory study aimed to identify the distinctive characteristics that can characterize the inclusive physical education teacher profile (IPETP).

Methods: A total of 145 Portuguese PE teachers participated in this study, with an average length of service of 23.6 ± 8.1 years. Participants answered an online questionnaire, on Google Forms, consisting of open and closed questions. Data processing was carried out through descriptive statistical analysis and content analysis.

Results: The results identify as the main differentiating characteristics of the IPETP: accepting the difference (80.7%); cooperation capacity (75.4%); skills to support all students (70.1%). As main attributes of the teacher, it is recognized the appreciation of the critical spirit and the ability to readjust to the unforeseen (97.3%), along with the characteristics of cooperation with others (97.3%). It is also identified the intention of a constant update in order to better intervene (96.6%) and pedagogically master the subject that is taught (96%).

Discussion: The need to build an IPETP identity reinforced by the values of inclusion is recognized and materialized in the intentionality of wanting to make inclusion happen.

Conclusions: In short, beyond the importance of mastering the dimensions of achievement. It is also highlighted the importance in inclusive PE teachers the human formation of knowing how to be, be and act, that is, the personal excellence of these teachers as a response to the full realization of school inclusion.

Keywords: inclusion, teacher training, inclusive education

References: European Agency for Development in Special Needs Education (2011).

Teacher training for inclusion in Europe – challenges and opportunities. European Agency for Development in Special Needs Education.

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Meditation practice effects in subjects with autistic spectrum disorder

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 994

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Introduction: The objective of this study is to show the benefits of Meditation practice for young people with Autistic Spectrum Disorder.

Methods: The intervention study lasted for 9 months, including two cycles, one of 8 weeks, and one of 4 months. Participants ($n = 8$; male = 7, female = 1) with average age of 21.5 years old ($SD = 4.37$). During both cycles, a weekly session of Meditation, which consisted of Mindfulness and Mantras exercises was conducted in the classroom of the center where the sample was following an administrative course. The participants were all invited to practice at home the different exercises, when waking up and before sleeping, for approximately 15 minutes. At the end of both cycles, we made qualitative interviews with each participant, one of their closest family members, and their staff members from the center. Field notes were written at the end of each session.

Results: From the interview analysis, we noticed that 5 out of the 8 participants practiced at home, the practice became part of a habit for them, and those were the most susceptible to show results, in stress and anxiety reduction, an increase in concentration, and better emotional control.

From fieldnotes analysis, we observed a positive evolution of more and more pro-social behavior among most of the participants, which contributes to a better environment in the classroom.

Discussion: We assume that family interest in the practice had an impact on the adhesion of the participant to the program and consequence in better results. The participants who adopted our program as part of their daily life routine have shown results in a reduction of stress and anxiety and a better focus, concentration, prosocial improvements in the class environment, and better communication at home with family members.

Keywords: meditation, autism

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"I expect to show women they can": Voices from Paralympic women

Theme: Excellence in Disability Sport

ID: 972

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Introduction: Sport is a social context primarily associated with masculinity traits. Virility and competitiveness promote a male-dominated space, with low women's participation, especially those classified as disabled and deviant (Apelmo, 2017). This research sought to investigate the perspectives of disabled women in Paralympic Sport. Based on Feminist Disability Studies, we focus on gender, disability, and the intersectional meanings of Paralympic sports experiences.

Methods: Interviews were designed with a phenomenological perspective and applied with four Paralympic women who competed officially. The discourses were analysed with content analysis.

Results: Four major categories emerged from Paralympic woman's voices: be a woman, be disabled, be normal, and be a Paralympic athlete.

Discussion: "Be a woman" was a category that represented multiple perspectives. Some participants perceive themselves as fragile, while others, as an empowered woman. Unanimously, many showed the role of passivity towards their families, coaches, or even society. "Be disabled" brought the narratives of being classified as incapable and stared. Based on the medical model, the women reported disability was a tragic aspect. "Be normal" gathered the feeling of freedom autonomy and not be stared at. For them, being normal was assigned to non-disabled people. Finally, "be a Paralympic Athlete" is a new identity. They built it through the disabled and athletics experience. They feel responsible for inspiring more women and sharing the sports possibilities.

Conclusions: This study contributes to unravelling a dominated scenario for non-disabled men. Adverse speeches and practices constantly challenge Paralympic women, but their disabled and athletic identity engages them in a sports career.

Keywords: feminist disability studies, disabled women, Paralympic sport

References: Apelmo, E. (2017). Sport and the Female Disabled Body. Routledge.

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Impact of the pandemic on the expectation of Paralympic Athletes on performance in Tokyo 2020 according to disability

Theme: Excellence in Disability Sport

ID: 1019

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Introduction: In Brazil, Paralympic athletes were directly impacted, as they were 5 months away from the Paralympic Games. Thus, this study investigate the expectations of Paralympic athletes considering the condition of quarantine in relation to the Tokyo 2020 Games, according to their disability.

Methods: 179 athletes participated in this study (112 men, 68 women), with physical disability (n=154) and visual impairment (n=25). Athletes answered an online questionnaire on what the impact of the pandemic would be on performance at the Tokyo 2020 Games. The groups were: visual impairment (a single group) and the athletes with physical impairments were divided into 8 types according to their characteristics for eligibility for parasport: Limb deficiency (LD); Short Stature (SS); Leg Length Difference (LLD); Impaired Muscle Power (IMP); Spinal Cord Injury (SCI); and Cerebral Palsy (CP)

Results: Of the total number of athletes, 44.7% indicated that the pandemic would neither harm nor facilitate performance in the Games, the second most cited answer was that “it would harm” (35.9%), followed by “it would harm a lot” (12, 7%). This order was maintained for athletes with visual impairments, for LD, SS, LLD and IMP. However, athletes with SCI and CP had a higher frequency in the “harm” response with 46.1% and 42.8% respectively.

Discussion: The perception of greater impact of quarantine on performance was indicated by athletes with greater physical impairment SCI and CP.

Conclusions: To identify which effects the perception of these athletes could have on the results of the Paralympic Games in Tokyo 2020, it is necessary to investigate the training and psychological effects.

Keywords: pandemic, sport, disability

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Analysis of coordination and lower limb power in football players with intellectual disability, cerebral palsy and acquired brain injury

Theme: Excellence in Disability Sport

ID: 1006

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Introduction: Currently in Spain, there are 7-a-side football competitions for people with cerebral palsy (CP) and acquired brain injury (ABI) and 8-a-side football for people with intellectual disabilities (ID). This latter competition is also open to CP and ABI people with cognitive impairment (CP/ABI+CI). This allows the same club, with the same coaching staff, to have teams from both competitions and to have players who can participate in both modalities. The aim of this study was to investigate if there are differences in the coordination and in the explosive strength of lower body in football players with ID, CP without cognitive deficits and CP/ABI+CI, to adapt the training to each profile or to validate the collective work of the footballers.

Methods: Football players were divided into three groups based on their medical disability certificate: in ID (n=29), CP without cognitive impairment (n=6) and CP/ABI+CI (n=14). During the preseason, we analysed the coordination with the side-stepping, the split jumps and the rapid heel-toe tests and the lower limb power with the standing broad jump (SBJ) and the 4-bounds for distance tests. Multiple samples comparisons were analysed by one-way-Anova following Bonferroni post hoc test.

Results: The 3-footballer groups had similar values for muscle mass index, age, height, weight and percentage of disability. There were no differences in coordination test between the 3 groups. Interestingly, we found that CP football players without CI jumped a significantly shorter distance when performing the SBJ test.

Conclusions: Although it is a preliminary study, our results suggest that physical handicap influences the lower limb power rather than coordination in football players with CP, CP/ABI+CI and ID. Further studies are required, in which CP and ABI football players will be grouped according to their functional classification following the regulation of the IFCPF.

Keywords: football, intellectual disability, cerebral palsy, acquired brain injury

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Pacing and stroke kinematics in elite paracanoeing racing

Theme: Excellence in Disability Sport

ID: 1130

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Introduction: Flatwater paracanoeing is a competitive discipline performed in kayak (K) or va'a (V) where athletes compete in straight line over 200 m. Considering the athletes impairment, they are classified into three classes for each type of boat - KL1, KL2 and KL3 and VL1, VL2 and VL3. This study aims to analyse the pacing and stroke kinematic in paracanoeing race, investigating the relationship between stroke rate, stroke length and boat velocity.

Methods: A Global Positioning System with accelerometer (GPS-Acc) 15 Hz and 100 Hz, respectively, were used to quantify the kinematic variables – velocity (v) and boat longitudinal acceleration (Acc). Based on the Acc, the stroke rate (SR) was identified automatically (Fernandes et al. 2021) and stroke length (SL – boat displacement per stroke) was calculated ($SL=V/SR$). During a Paracanoe World Championship data was collected in heat, semifinal and final races of the KL1, KL2 and VL1 classes in a total of 8 races.

Results: SR was higher in kayak compared to Va'a. Peak velocity was reached between 40 and 55 m, and after that the velocity tended to decrease until the end of the race. The stroke length varied between 1.6 to 2.5 m per stroke, being lower at the start of the race reaching the maximum between the 50 and 100 m of the race.

Discussion: The velocity along the race evidenced an all-out pace strategy independently of the boat or class of impairment. In terms of SR, the automatic identification depended on boat peak longitudinal Acc, and our results showed to be more pronounce in va'a boat compared to kayak.

Conclusions: The kinematic data extracted from the race can be crucial to help coaches and paracanoe athletes in terms of training planning of the physical development and race strategy definition.

Keywords: biomechanics, stroke rate, stroke length, Paralympic canoeing

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Influence of quality of the opposition in match physical response of para-footballers with cerebral palsy

Theme: Excellence in Disability Sport

ID: 1017

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Introduction: The match physical response on non-impaired football players varies according to contextual factors such as team ranking opposition. However, this aspect has not been studied in CP soccer. The aim of this study was to compare the physical response during competitive matches with the opposition of top-8 and bottom-ranked teams in a group of elite para-footballers with cerebral palsy (CP).

Methods: Twenty-four male para-footballers from top-8 ranked teams participated in this study. The match physical response was monitored during official international tournaments using global position system. The matches were categorized according to the ranking of the opposition team (Top-8 = 13 players; Bottom = 11 players). The variables used were: distance covered at different intensities (low walking, walking, jogging, medium intensity running, high-intensity running, and sprinting), and number of moderate or high accelerations/decelerations.

Results: Significant more distance at sprinting, a greater number of high acceleration and moderate to high deceleration was performed in matches with the opposition of top-8 ranked teams compared to playing with teams of lower quality ranking.

Discussion: Match physical response varies according to contextual variables related to team opposition quality in CP footballers. Matches used for observation in competition during the classification process need to be considered when examining the impairment's impact on football-specific skills.

Conclusions: The findings showed greater physical response in the distance covered at sprinting and the number of accelerations and decelerations when top-ranked players are playing against top-ranked teams.

Keywords: contextual factors, opposition quality, para-sport

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“Everybody wants to be included”: Experiences with ‘Inclusive’ strategies in physical education

Theme: Inclusive Physical Education

ID: 898

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Introduction: The purpose of this study was to examine how students with orthopedic impairments experience strategies identified in the literature to support ‘inclusion’ (Lieberman et al., 2019; Whilliston, 2017).

Methods: An interpretative phenomenological research approach was used and six youth served as participants. Data sources were written prompts, semi-structured interviews, and reflective interview notes.

Results: Based on thematic data analysis, four themes were constructed: “It’s kind of embarrassing”: experiences with support; “I don’t want to be different”: equipment, activity, and rule modifications; “I like to be a part of the conversation”: autonomy and choice in PE; and “I would rather be like the other students”: discussing disability.

Discussion: The experiences portrayed through these themes highlighted the differential effects of these explicated strategies, where each strategy contributed to feelings of inclusion, as well as marginalization among participants.

Conclusions: As such, the findings indicated that ‘inclusive’ strategies should not be considered as blanket recommendations; instead, attempts to promote ‘inclusion’ of students with disabilities should start with a reflexive look at the unique needs of each individual student.

Keywords: adapted physical education, inclusion, orthopedic impairment, physical disability

References: Lieberman, L., Grenier, M., & Brian, A. (2019). How inclusive is your physical education class? Introducing the Lieberman/Brian Inclusion Rating Scale for Physical Education. *Journal of Physical Education, Recreation, and Dance*, 90(2), 3-4.
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Reverse inclusion, welcoming and estrangement: Experiential perceptions of a university professor with visual impairment

Theme: Inclusive Physical Education

ID: 1146

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Introduction: Teaching demands require actions prior to classes and implying questions about the inclusion of people with disabilities in the labour market and particularly at university teaching. The main purpose of the study was to describe the perceptions of a Physical Education University Teacher teaching a pedagogical Dance curricular unit to undergraduate students in the city of Belo Horizonte.

Methods: The study design was based on a qualitative research narrative of a case study report built using different sources of information such as field notes and short statements expressed by students about the main strategies used during the dance classes as well as videos and photos from the different activities experienced.

Results: The first perceptions felt were very much related with a perceived idea of absence of a qualified teacher for this curricular unit and to the need to meet the institutional job quota for people with disabilities. Soon, other questions and doubts arose: "Do you see? How do you teach classes by seeing so little? Is this the teacher who's going to teach the class?" Coping teaching strategies made students move progressively from estrangement to empathy, where the recognition of professional authority and welcoming were consolidated. These teaching strategies included: dialogue about visual limitations; the adequacy of the environment; the need for the recognition of silence so that the speech identities of each student, their location, doubts and concerns were perceived; the teacher's movements around the classroom during the class, following the performance of the proposed activities; the approximate pedagogical observation and the repetition of the execution of guided movements.

Discussion: Mutual respect, recognition of differences and pedagogical adaptations were key factors contributing to collaborative teaching. These strategies enhanced the process of reverse inclusion in the face of exclusion paradigms, transposing the barriers of initial students' impact with the professor with disability.

Conclusions: Sharing this experience promotes the recognition of the inherent potentialities of people with disabilities, bringing contributions to the construction of more inclusive educational environments in the work environment and in teaching practice.

Keywords: Reverse inclusion, High education, Blindness, Inclusive strategies

Prescription and effects of strength training in individuals with intellectual disability - A systematic review

Theme: Physical Activity and Exercise for Health and Well-being

ID: 958

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Introduction: The practice of physical exercise (PE), especially strength training (ST), has health benefits in the healthy population (WHO, 2020). However, the literature is scarce in the recommendations related to the population with intellectual disability (ID) (St John et al., 2020). This study represents the first analysis on the topic and aims to examine the structure and efficacy of ST experimental intervention programs in individuals with ID.

Methods: This systematic review was carried out between January and April 2021, using the PubMed, Web of Science, Scopus, and SPORTDiscus databases, according to the PRISMA guidelines.

Results: From a total of 166 studies, eight were included in the present systematic review. The studies included a total of 280 individuals (18.23 ± 2.86 years old).

Discussion: The main features of the exercise programs are: 12 weeks average duration, three weekly sessions of 45–60 min, six to seven exercises targeting the main muscle groups, two to three sets, 6–12 repetitions, and avoiding free weights for safety reasons. It is a useful guideline for PE technicians to prescribe and adjust correctly in order to not only promote physical fitness, but improve the quality of life of individuals with ID.

Conclusions: The main results showed increments in strength, balance and fat-free mass and decrements in fat mass and waist circumference.

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St. John, L., Borschneck, G., & Cairney, J. (2020). A Systematic Review and Meta-Analysis Examining the Effect of Exercise on Individuals With Intellectual Disability. *American Journal on Intellectual and Developmental Disabilities*, 125(4), 274–286.

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Supporting participation in inclusive physical education through technology – opportunities and challenges

Theme: Inclusive Physical Education

ID: 990

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Introduction: Digitalisation and inclusion are topics that currently shape a large part of educational policy discourses in Germany. Although these two cross-cutting issues are considered more intertwined in some professional debates (Bosse et al., 2019), this link has been largely absent from physical education (PE) discourses. Thus, it is important to investigate to what extent digital media can expand the didactic design of inclusive learning settings in PE in order to support equal participation of everyone. Accordingly, the question about appearing opportunities and challenges from using digital media in inclusive PE is brought into focus.

Methods: National and international research results were analysed using the PRISMA method (Page et al., 2021). In addition, five qualitative expert interviews were conducted, which were evaluated by use of the content-structuring qualitative content analysis (Kuckartz, 2018).

Results: The results show many application options of digital media in the field of inclusive PE in order to address the diverse needs of students and increase chances of participation (e.g. through assistive support or visualisations). Increased educational disadvantages and a reduction in physical activity time can be identified as a selection of possible risks.

Discussion: In order to strengthen the potential and minimise the risks, it is necessary to identify the conditions for success. In this context, the digital competence of teachers plays a relevant role.

Conclusions: These findings can be used to draw conclusions for PE teacher training.

Keywords: digitalisation; qualitative research

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Parent and teacher perceived changes in stereotypic behaviour among autistic children following an eight weeks exercise programme

Theme: Physical Activity and Exercise for Health and Well-being

ID: 947

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Introduction: Research has shown that exercise can improve stereotypical behaviour among autistic children; however, it is unknown whether the effects of an exercise intervention on stereotypical behaviour are perceived differently among autistic children's parents and teachers. Thus, the aim of this study was to investigate the effects of an eight weeks school based integrative neuromuscular training (INT) intervention on stereotypical behaviour as perceived by autistic children's parents and teachers.

Methods: Fourteen autistic children (8.07 ± 2.30 years) took part in an 8-week INT intervention implemented in their schools, consisting of three, one-hour sessions per week. Fourteen parent and teacher ratings of the autistic children's stereotypical behaviour were measured using the Aberrant Behaviour Checklist (Aman & Singh, 1986) pre-and post-intervention. A paired samples t-test and a Wilcoxon signed ranks were used to analyse data pre and post intervention and to compare differences in reported stereotypic behaviour between parents and teachers.

Results: Teachers reported significant improvements in irritability, social withdrawal, stereotypic behaviour and hyperactivity following the INT intervention ($p < 0.05$). However, parents reported no significant difference in behaviour measurements ($p > 0.05$). There was no significant difference between parent and teacher reported stereotypical behaviour changes post intervention ($p > 0.05$).

Discussion: In a structured school environment, teachers may observe the greatest improvements in stereotypical behaviour measurements among autistic children. Parents do not appear to report the same behavioural changes at home.

Conclusions: Findings suggest an eight weeks school-based INT intervention can elicit significant improvements in stereotypical behaviour measurements in class, but that these changes are not as evident in the home environment.

Keywords: exercise, maladaptive behaviour

References: Aman, M. & Singh, N. (1986). *Aberrant Behavior Checklist Manual*. Slosson Publications

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Content validation of the instrument "Individualized Teaching Plan applied to Physical Education" - A proposal for intervention in Portugal

Theme: Inclusive Physical Education

ID: 969

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Introduction: Students and Physical Education (PE) teacher have an important role as part of the educational inclusion process (Fiorini & Manzini, 2014). The inclusion of students in Physical Education classes still faces some problems and many Physical Education teachers consider that they are not prepared for inclusive education. The Individualized Teaching Plan applied to Physical Education is a document that allows to obtain a work plan so that teachers can work more effectively with their students who have disabilities. The aim of this study was to report the content validation process of the instrument “Individualized Teaching Plan applied to Physical Education” in the Portuguese population.

Methods: The sample consisted of 12 evaluators, all with a degree in Physical Education and training and/or experience in special education, 6 of whom are teaching in primary and secondary education and 6 in higher education. The participants were aged between 29 and 61 years old, and had 2 and 35 years of teaching service.

Results: The document is structured in three parts: I. Student information; II. Student Performance Level and III. Physical Education Program. In each of the parts, the evaluators analysed the clarity of the language, theoretical relevance and feasibility of application.

Discussion: The evaluators also expressed their opinion about the proposal, which may or may not have been maintained. We conclude that, in general, the evaluators revealed that the information was adequate and that it should be maintained.

Conclusions: Some suggestions made by the evaluators/judges who participated in the study were also taken into account.

Keywords: inclusion, PE, individualized teaching plan, Portugal

References: Fiorini, M. & Manzini, E. (2014). Inclusão de alunos com deficiência na aula de educação física: identificando dificuldades, ações e conteúdos para prover a formação do professor. *Revista Brasileira de Educação Especial*, 20(3), 387-404.

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Intervention plan to study corporal schema in two rare genotypic diseases students

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1059

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Introduction: The current paper presents an intervention plan based on two severe mental disability students linked to Rare Illnesses for the inclusion in corporal schema. In this intervention programme it was assessed and worked about the different elements that involve it by varied techniques associated to the work of people with any disability.

Methods: The program included two students with rare genotypic diseases who had similar characteristics: profound degree of disability and autism. The investigation was design in two phases: The first phase consisted of the evaluation of the students (CIF-IA manual) and the second phase the implementation of the program to improve the Body Schema based on different techniques. To control the improvements of the intervention plan, both participants developed this test before (pre-test) and after (post-test) of the intervention (Torres, 2010).

Results: The results conclude in a slight improvement of the scores of the final evaluation with respect to the initial one. The average of the improvement rates is 0.53 in Student 1 and 0.73 in Student 2. In addition, there is a significant improvement in both students in balance and vestibular system.

Discussion: The initial evaluation (CIF-IA manual) provided the necessary data to know the individual characteristics of the student. Intervention plans carried out based on vestibular physiotherapy concluded with an improvement in static and dynamic balance and a decrease in the risk of falling, fact that is observed in this study.

Conclusions: The overall balance of the intervention has been positive. The results were positive in favour of the study where a slight improvement was achieved in some of the aspects, especially the elements related to balance and coordination (the exercises proposed from vestibular physiotherapy).

Keywords: diversity attention, rare disability, Corporal Schema, evaluation

References: Torres, C. (2010). Técnicas de expresión y psicomotricidad. Madrid: Asociación de psicomotricidad.

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The impact of an integrative exercise program for people with multiple sclerosis on balance and fatigue: Preliminary results

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1136

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Introduction: Multiple Sclerosis (MS) negatively impacts health-related quality of life and leads to a decline in general functioning, participation, and work productivity. Exercise is a promising non-pharmacological therapy for this group of the population.

Methods: Twelve people (8 women) with MS participated in a 20-week exercise program (2 times per week, most tele-session), including physical fitness activities, dual-task training, and mind-body activities. Paired-sample t-tests were used to compare pre- and post-tests scores regarding balance and fatigue.

Results: The participants improved their scores on two balance tests: timed up and go test (pre-test 8.96 ± 7.87 s, post-test 7.27 ± 6.29 s, $p=0.015$) and Fullerton Advanced Balance Scale (pre-test 34.33 ± 4.56 points, post-test 36.89 ± 2.26 points, $p=0.036$). No significant changes were found on two fatigue tests: Fatigue Severity Scale (pre-test 37.25 ± 13.8 points, post-test 35.0 ± 14.88 points, $p=0.45$) and Modified Fatigue Impact Scale (pre-test 36.5 ± 20.71 points, post-test 36.08 ± 23.50 points, $p=0.89$).

Discussion: The preliminary results of this study showed that exercise positively impacts balance and agility in people with MS. This is important as it is known that frequently people with MS have marked balance difficulties and a high risk of falling. Moreover, good balance facilitates the performance of activities of daily living, and it is associated with mobility and physical activity.

Conclusions: Exercise could enhance balance and agility in people with MS. Future research should support the design of exercise-based programs for this population that target physical, motor, cognitive and affective dimensions.

Keywords: physical activity, multiple sclerosis, disability-related symptoms

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Physical activity experiences of Asian-Indian Families with children with autism spectrum disorder

Theme: Physical Activity and Exercise for Health and Well-being

ID: 967

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Introduction: Asian-Indians are the third highest ethnic group in the United States, yet there has been no study that reports the experiences of Physical Activity (PA) participation of Asian-Indian children with Autism Spectrum Disorder (ASD). Hence the purpose of this study was: (a) to understand why or why not Asian-Indian families with children with ASD pursue and participate in PA, and (b) to describe the strategies and supports needed by Asian-Indian families with children with ASD to improve PA participation.

Methods: Participants (n=7) in this descriptive-qualitative study were Asian-Indian parents of children with ASD ages 4-16. Data was collected through personal data sheets of demographic information followed by one-on-one semi-structured telephone interviews. Interviews were transcribed and then analysed using thematic line-by-line analysis.

Results: The major motivation of PA participation for Asian-Indian parents of children with ASD was to provide physical and functional independence to thereby promote a healthy living. Parents expressed that they faced familial and external barriers in engaging their children with ASD in PA.

Discussion: Asian-Indian parents of children with ASD emphasized the importance of PA, but expressed certain factors such as financial barriers, lack of professional expertise, child's disability levels and lack of awareness and acceptance in the community and their families regarding ASD, as a hinderance to their child's participation in PA.

Conclusions: Parents play an important role in promoting PA for their children. There is a need for culturally inclusive resources and strategies for Asian-Indian families with children with ASD to participate in various types of PA.

Keywords: diversity, Asian-Indian families, autism, physical activity

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Santo André adapted swimming support center: Promoting physical activity and health in pandemic crisis

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1120

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Introduction: The Santo André Adapted Swimming Support Center (NANASA; Brazil) offers adapted swimming classes for people with diverse conditions of disabilities. This pedagogical proposal promotes the possibility of experiencing physical activities in the aquatic environment to facilitate social development and autonomy. This research aims to present an overview of the path followed by NANASA teachers in the midst of the COVID-19 pandemic.

Methods: The first action was the meeting with the pedagogical team to plan and rework alternatives to maintain contact with families and 190 participants. These proposals for adapted physical activities were possible using the WhatsApp application as a communication resource and the participants were divided in 16 groups, respecting their periods of classes. In the second action, the teachers shared their intervention proposals. These activities like games and physical exercises were planned for the participants and realized twice a week.

Results: The use of the WhatsApp application contributed to plan the adaptations, to share suggestions, success experiences and the difficulties which were discussed and developed by teachers in a reflexive way for composing the process of collaborative construction of pedagogical practices.

Discussion: In this learning process it was possible to observe that these pedagogical proposals encouraged the participants to interact with the activities; however, many challenges were faced such as the adherence of the participants that reflect on the technological barriers, inequality and social justice.

Conclusions: The NANASA teachers experienced possible paths in a chaotic scenario with the effort to maintain ties and attend the participants, reinforcing the social responsibility of all those involved in the inclusive process in the different moments.

Keywords: adapted swimming, inclusion, remote teaching

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The inclusion of children with disabilities into non - formal sport activities in Lithuania

Theme: Inclusive Physical Education

ID: 1007

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Introduction: Children with disabilities (CWDs) experience difficulties in the education system and in the field of sports and active leisure in Lithuania. There is no data on the possibilities to access non-formal sport activities for CWDs have been found. Therefore, the aim of the study is to find out the barriers and obstacles that limit the opportunities for CWDs to access sports.

Methods: Qualitative research was conducted in 2021, using the questionnaire. The questionnaire was sent to 842 organizations providing non-formal sport services in 8 municipalities, but only 341 of them filled in the questionnaire.

Results: Even 90 organizations did not include CWDs, but are ready to provide activities for them and 35 organizations indicated that they have no plans to include CWDs. 140 organizations indicated that their activities are accessible for CWDs. 147 organizations were looking for opportunities to improve accessibility for physical activity; only 35 organizations had accessible information CWDs. The results showed that the most of the participated organizations are lacking of the positive attitude towards children with disabilities. There is the need to improve the motivation of including CWDs.

Discussion: Lack of funding and competent specialists working with CWDs were indicated as the biggest barriers for inclusion. Only a half of organizations provide non-formal sport activities for CWDs. Organizations seek to improve the accessibility, but very few organizations care about improving access of information.

Conclusions: The biggest barrier to providing physical activity services is the lack of financing and professionals working with CWDs.

Keywords: non-formal organization, physical activity, children living with disabilities

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Effects of an inclusive workshop in future physical education teachers

Theme: Inclusive Physical Education

ID: 1035

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Introduction: Reflecting on the professional training process in an inclusive perspective is essential, especially given the reports of insecurity feelings by University students in Physical Education, in particular for the development of equitable teaching strategies for people with disabilities. Therefore, the aim of this study was to create a workshop and to discuss the application of inclusive teaching strategies.

Methods: Participants were 40 undergraduate students in Physical Education course. The workshop was carried out in three phases during two months. The first phase occurred during three classes in the subject "Adapted Physical Activity" with the discussion about the students' challenges and expectations of teaching students with disabilities. Participants were divided into seven groups and each group developed an inclusive activity with the support of 'CRIE' model of inclusion (Campos, 2019), a tool aiming to facilitate the process of modify variables such as context, rules, instruction and equipment. In the second phase, these activities were applied to university students from the Pedagogy course during the Inclusive Workshop developed at the University Scientific Talks. In the third phase, the students presented photos and videos of the workshop and exposed their own perceptions during teaching activities in this inclusive context.

Results: The fears initially reported by students changed with the success of the workshop' experience teaching inclusive strategies.

Discussion: These strategies were re-elaborated whenever was necessary without difficulties for students.

Conclusions: The students discovered the potential of people with disabilities, as well as the creativity needed in developing inclusive strategies in the teaching and learning process.

Keywords: professional training, inclusive physical education, teaching strategies

References: Campos, M. J. (2019) "CRIE"... Because all children need to play! *Revista da Federação Portuguesa de Desporto para Pessoa com Deficiência*. Ano 5^o, 5(1), 22-28.

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Professional training in adapted physical activity during remote learning in Brazil

Theme: Inclusive Physical Education

ID: 1018

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Introduction: Among the various consequences resulting from the pandemic triggered by COVID-19 (Ng et al, 2021), significant changes in the Brazilian university academic routine led to the need to reorganize the activities for Remote Learning (RL). The RL has imposed many challenges, especially in the context of pedagogical practices for professional training (PT) in the area of Adapted Physical Activity (APA). The aim of this study was to identify which resources and teaching strategies were used by university professors for initial training in APA during the RL.

Methods: Descriptive research was developed using the case study as a strategy. The sample consisted of 32 professors from Brazilian universities, who taught courses of APA during the RL. An online questionnaire was sent to the participants by email.

Results: It was found that most teachers used Google Meet for synchronous activities. Asynchronous activities were organized in virtual learning environments such as Moodle or Google Classroom, providing texts in PDF, video links on platforms such as YouTube, among other applications. The students were asked to develop videos related to the content, share posts on Instagram, participate in web conferences, and produce podcasts regarding APA.

Discussion: Although RL strategies have met the emergency demand, professors were unanimous in reiterating the need for complementary practical components for PT.

Conclusions: Professors consider that the PT in APA occurred satisfactorily, although the limitation of practical content experience may compromise the future professional performance. It was recommended to resort to continuing education.

Keywords: adapted physical activity, professional training, remote learning

References: Ng, K. et al. (2021). Teachers' preparedness to deliver remote adapted physical education from different European perspectives. *European Journal of Special Needs Education*, 36(1), 98-113.

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Continuing education of physical education teachers regarding the construction of the individualized education plan

Theme: Inclusive Physical Education

ID: 998

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Introduction: The use of Individualized Education Plan applied to Physical Education (IEP-PE) can be a favorable strategy for inclusive pedagogical practices in physical education classes. It is considered important to expand knowledge about IEP-PE and train PE teachers who work with students with disabilities regarding the elaboration and implementation of this tool. This study aimed to structure and apply a continued education training course addressed to the PE teachers, concerning the IEP-PE.

Methods: Under a qualitative and collaborative approach, 13 PE teachers from a medium-sized city in the northwest region of the state of São Paulo participated in the study. Data collection involved the following steps: 1) Approaching and establishing a bond with the school community; 2) Identification of the problem to be solved; 3) Implementation of the program, consisting of Part A, Continued Education Course, and Part B, IEP-PE preparation meetings. As data collection instruments, initial interviews and systematic observation scripts were used. Data were treated through thematic analysis.

Results: Results shown the need for closer ties or bonds between PE teachers and the multidisciplinary team of the schools. PE teachers demonstrated initial doubts and confusion about the role of IEP-PE and its elements. The implementation of the program covered contents like definition of terms and concepts, assessment instruments related to PE, and information related to the teacher's program. It was reinforced the importance of the participation of the PE teacher in the IEP meetings.

Discussion: Field notes registered successful experiences of IEP-PE implementation by PE teachers. During the interviews, PE teachers reported that the IEP-PE training course increased the sense of preparedness to include students with disabilities in their classes.

Conclusions: It was concluded that the continued education training course and the IEP meetings brought autonomy to PE teachers regarding the preparation and implementation of the IEP-PE.

Keywords: individualized education plan, continuing education, inclusion, physical education

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Core values of adapted physical activity for persons with disabilities expressed by sport pedagogues at six rehabilitation centers in Norway

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1055

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Introduction: Beitostølen Healthsports Center (BHC) is a pioneer institution within rehabilitation in Norway, together with five other rehabilitation centers, recognized as official parts of the national specialist health care system in physical medicine and rehabilitation. The objectives of the study were to generate knowledge on how sport pedagogues who work in adapted physical activity (APA) express and practice the core values of APA at the rehabilitation centers.

Methods: A case study took place in a Norwegian context. Six focus group interviews with the total of 26 participants were conducted at six rehabilitation centers, focusing on how the core values of participation in APA become visible in their daily work.

Results: Most of the sports pedagogues had high awareness of the values embedded in APA and that it was expressed and visible in their daily work with enhancing participation in persons with disabilities. Expressed values in the meeting with persons with disabilities at the centers were; to make right adaptations at the right time in the right context, to facilitate experiences of mastery and enjoyment, and to focus on the potential and participation possibilities. They had a holistic and pedagogical perspective and empowerment and self-determination was important.

Discussion: However, they experienced challenges associated with their professional role in the meeting with persons with disabilities. Despite the fact that they had the value base with them, they also seemed to be able to execute leadership that contradicted the same values and ethical perspectives problematized in the literature.

Conclusions: Even if the sports pedagogues had high awareness of the values embedded in APA, and the values were expressed and visible in their daily work, they struggled with ethical challenges.

Keywords: APA, core values, rehabilitation institutions

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The effects of an adapted physical activity program on gait, balance and quality of life in persons with parkinson's disease

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1104

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Introduction: Due to the decreased level of physical activity during the COVID-19 pandemic, movement problems and quality of life (QOL) of the Parkinson's disease (PD) patients became worse. One of the modifiable risk factors of interest for PD is physical inactivity (Urell et. al., 2019). Adapted physical activity (APA) could be one of the methods to improve the movement functions and QOL in patients with PD. The research aim is to evaluate the effect of an APA program on gait, balance and QOL in persons with PD.

Methods: The study involved 10 persons with an average age of 77 diagnosed with PD. QOL was assessed using the Short Form Health Survey Questionnaire (SF-36). The Timed Up and Go (TUG) test was used to assess gait and balance control. The 6-week Individualized Adapted Physical Activity (APA) program was employed twice a week for 45 minutes. The results were processed using IBM SPSS Statistics 22.0 and MS Excel.

Results: After the APA program, the average TUG test execution time decreased by 1.21s ($p < 0.05$). Statistically significant improvement was observed in the QOL indicators in four areas: energy, social functions, pain, and health in general. After the APA program, statistically significant improvement was determined in gait and balance of people with PD.

Discussion: The hypothesis that the 6-week APA program could improve the balance, gait, and QOL in individuals with PD was confirmed. Significant increases in social functions, energy, and emotional state, indicate that this program had an impact not only on the gait and balance, but also on mental health. The study was affected by the pandemic situation in Lithuania resulting in the small sample size and the absence of a control group.

Keywords: Parkinson's disease, quality of life, adapted physical activity

References: Urell, C., Zetterberg, L., Hellström, K., & Anens, E. (2019). Factors explaining physical activity level in Parkinson's disease: A gender focus. *Physiotherapy Theory and Practice*, 1-10.

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Body awareness, self-identity and perception of exercise importance after stroke rehabilitation

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1040

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Introduction: A stroke is a serious life-threatening medical condition that happens when the blood supply to part of the brain is cut off. Although stroke presentation rate is decreasing, it still continues to be the main cause of mortality and morbidity in Portugal.

Methods: We conducted 15 semi-structured interviews, via zoom platform, with stroke survivors from both sexes, aged between 20 and 52 years old which were integrated on the group “Grupo de Ajuda Mútua” from the national organization “Portugal AVC”.

Results: Stroke survivor’s self-perceptions of their body and their Self changed, independently of the motor sequelae. The way the survivor sees himself in the first phase after the stroke, causes a change in the perception of his own body, leading to the emergence of issues related to his own identity and a reduction in self-esteem.

Discussion: All these issues tend to dissipate as there is an understanding and gradual acceptance of the stroke. The way society sees the stroke survivor also negatively influences the survivor's self-perceptions. Exercise may have a relevant impact on such perceptions and on the way survivors perceive themselves after stroke.

Conclusions: The perception of the importance of physical exercise after stroke rehabilitation is unanimous among survivors, but there is an overlapping between physical exercise and therapeutic exercises, in most survivors, which still demonstrate some lack of confidence in sports professionals, suggesting the need for specific physical exercise programs for stroke survivors.

Keywords: stroke survivors, self-perceptions, body awareness, identity, physical exercise

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Training in inclusive physical education: representations of Portuguese teachers

Theme: Inclusive Physical Education

ID: 1123

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Introduction: There is a broad scientific consensus regarding the existence of a set of barriers and constraints that compromise inclusion in physical education (PE), such as teacher training. Thus, this exploratory study aimed to identify PE teachers' representations about their education and training for the development of inclusive processes.

Methods: A total of 145 PE Portuguese teachers participated in this study, who had an average length of service of 23.6 ± 8.1 years. Participants answered an online questionnaire, consisting of open and closed questions. Data processing was carried out through descriptive statistical analysis and content analysis.

Results: It was found that 65.5% of those questioned said that after leaving the initial training courses, they did not have the essential skills to teach PE to students with NEE. Likewise, 66.2% consider that such training was not adjusted to the development of intervention skills with these students. About 67.5% reported having had no contact with such students during their training. Regarding the current initial training of PE teachers, 50.3% consider that current trainees are not properly prepared to intervene in the context of inclusive schools.

Discussion: In general, the findings are in line with the literature. It is recognized that there is an inconsistency in initial training with regard to training to intervene with students with disabilities (Nichols et al., 2019).

Conclusions: In short, in initial PE training, it is necessary to develop moments of supervised pedagogical practice in a real context, aiming not only to deepen and consolidate specific pedagogical and didactic skills, but also the need to promote direct contact with people with disabilities.

Keywords: inclusion, physical education, inclusive education

References: Nichols, C., Block, M. E., & Wilson, W. J. (2019). Analysis of graduate programs in adapted physical education in the United States. *International Journal of Kinesiology in Higher Education*, 3(2), 47-57.

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Physical education teacher's initial training and competences in an inclusive perspective in Mozambique - A curriculum review proposal

Theme: Inclusive Physical Education

ID: 1039

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Introduction: The teacher's training and qualifications issue has been a controversial challenge over the years in Mozambique, questioning at this point the quality and relevance of the education offered in teacher training centers, especially in higher education. Graduated teachers seem to have difficulties in reconciling relevant theoretical-practical aspects and, in some cases, they are completely unprepared to deal with children and young people with disabilities.

Methods: The study is based on a qualitative approach using a semi-structured interview to understand the structure of existing courses and the main needs to improve their quality for teacher's training.

Results: The literature seems to show, among several factors, the existence of weaknesses in the process of initial training of Physical Education teachers who work with people with disabilities due to the lack of practical opportunities in real contexts in addition to the lack of a transversal approach in the different disciplines. Another differential element is the structure of the specific discipline(s) aimed at people with disabilities in Physical Education – undergraduate courses.

Discussion: Teachers feel that they were not prepared enough during their initial training to assist students with disabilities in physical education classes.

Conclusions: There is a lot to discuss and to achieve when aiming for a diversity approach in Mozambique, however, in practice, the different universities of higher education still do not effectively master how to carry out this work and it is necessary to seek innovative strategies based on what already exists to build a curriculum that responds effectively to this topic.

Keywords: initial teacher's training, adapted physical education teacher, physical education didactics, children with special needs

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Participation and barriers to physical activity and leisure time sport among children with special support needs in Finland

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1003

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Introduction: Currently, only one third of Finnish children meet the international guidelines of physical activity (PA), with those with disabilities it is even less. This part of project called “TUTKA (2017–2018)” examined the amount of PA in leisure time, organized sport participation and barriers to PA of children and adolescents who were studying in special educational schools or in special educational classes (SECS) of a general school.

Methods: A sample of pupils (age range 7-18) in SECS (n=889) from around Finland were recruited in the study. There were three surveys (S-model [44% of responses], M [39%], L [17%]) for pupils with different types of special support needs. Easy-to-read language was available in S- and M-questionnaires; the number of questions and the range of response choices increased from S to L. The dependence between the variables was examined with Pearson's correlation coefficient, T-test and Chi-squared test. Pupils age, sex and whether they studied in special educational school or in special educational class of a general school, were used as categorical variables.

Results: Almost half (43%) of the children reported to do some PA every day. However, only 22% reported to meet the PA recommendation: 60 min/day. 38% of children and adolescents participated in organized sport. The youngest children were involved more often than older ones. The most common barriers to PA were: ‘exercise is boring’ (83%) and ‘exercise is too competitive’ (83%).

Discussion: This study was the first nationwide sample of pupils who studied in SECS in Finland. This study confirmed that children with disabilities do PA and participate to organized sport less than peers without disabilities.

Conclusions: Sport clubs, sport services of communities and other sports promoters should offer more accessible PA opportunities, in order to provide children with disabilities equal opportunities to be physically active compared to those without any disabilities.

Keywords: disability, adolescents, health behaviour, organized sport

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Individuals with physical disabilities, health related behavioral changes during COVID-19 lockdown

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1062

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Introduction: In 2020, the COVID-19 pandemic affected the world. In order to reduce the spread of the disease and save lives, the Lithuanian government has implemented a number of public health preventive measures. With the onset of this unprecedented phenomenon, preventive measures could be expected to have a significant impact on individuals' health-related behaviors (Knell et al., 2020). The study aimed to identify changes in health-related behaviours of people living with physical disabilities during the lockdown.

Methods: Semi-structured interviews and content analyses to interpret the results.

Results: There were several positive changes in physical health during the lockdown. The data were grouped into, 1. increase in the level of physical activity, 2. increase in energy, 3. healthy eating habits and 4. adverse changes in physical health during the lockdown. The data were themed as decreased levels of physical activity, weight gain, energy decrease, and sleep arrhythmias.

Discussion: The findings revealed that the content of the disability was expressed by individuals experiencing social communication and communication problems during the lockdown period. We found that the participants felt that there were positive and negative changes in their emotions and psychological state, encompassing a range of experiences of happiness, hope, contemplation, fright, sadness, and fatigue.

Conclusions: Reviewing the results of the study, it can be stated that during the quarantine period, people with physical disabilities experienced positive and negative social changes, including emotional, psychological and physical health.

Keywords: physical disability, physical activity, eating, vitality

References: Knell, G., Robertson, M. C., Dooley, E. E., Burford, K., & Mendez, K. S. (2020). Health behavior changes during COVID-19 pandemic and subsequent "Stay-at-home" orders. *International Journal of Environmental Research and Public Health*, 17 (17).

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Relationship between exercise practice, health perception and fatigue in people with multiple sclerosis

Theme: Physical Activity and Exercise for Health and Well-being

ID: 995

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Introduction: Multiple sclerosis (MS) is a neurodegenerative disease in which exercise practice is key to its evolution and health perception

Methods: 7 women and 8 men with MS took part in the study, with a body mass index (BMI) of 25.96 (\pm 3.91) The abbreviated fatigue questionnaire and a health perceived questionnaire was used.

Results: Two participants perceived their health as good, 11 as regular and two as bad. Six of them did 3 or more exercise session per week, 6 participants did 2 sessions per week and 2 participants once per week. In the fatigue variable, the average responses was higher than 4 points out of 7. Correlation was found between the BMI and question relating to “the exercise makes me this fatigued”.

Discussion: Evidence supports the role of exercise in improving health perception in people with MS although further research is needed.

Conclusions: Exercise could positively influence the perception of health and fatigue perception in people with MS.

Keywords: exercise, sclerosis multiple, fatigue, health

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Effect of Wii fit on functional recovery of people with acquired brain injury in the subacute phase

Theme: Physical Activity and Exercise for Health and Well-being

ID: 983

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Introduction: Acquired brain injury (ABI) causes deficits that affect functionality. Practicing exercise with virtual reality interventions are useful during the rehabilitation (Belfiore et al., 2018; Lee et al., 2019). This study analysed the effect of a Wii fit intervention on the functional capacity of patients with ABI.

Methods: A sample of 20 patients with ABI of the National Rehabilitation Center of Spain (CEADAC) took part in the preliminary study. The Time Up to Go (TUG) and 10 Minute Walk Test (10MWT) was used.

Results: The sample was divided into 2 groups, G1 did less than 14 Wii sessions (n=9) and G2 performed more than 14 Wii sessions (n=8). The results show how both groups improved in the fall risk tests. G2 improved more on the 10 MWT and on the TUG.

Discussion: We agree with previous studies that indicate the usefulness of Wii in reducing fall risk. Continuity and adherence to exercise is essential for improvement and Wii interventions seem to be a good option to achieve this goal.

Conclusions: The use of the Wii Fit seems to be useful in the functional recovery of people with ABI in the subacute phase. However, it would be important to include a control group in future studies.

Keywords: exercise, virtual reality, acquired brain injury, rehabilitation

References: Belfiore, P., Miele, A., Gallè, F., & Liguori, G. (2018). Adapted physical activity and stroke: a systematic review. *The Journal of sports medicine and physical fitness*, 58(12), 1867-1875. <https://doi.org/10.23736/s0022-4707.17.07749-0>
Lee, H. S., Park, Y. J., & Park, S. W. (2019). The effects of virtual reality training on function in chronic stroke patients: a systematic review and meta-analysis. *BioMed Research International*, 2019.

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Profiles of mood in para athletes at Brazilian University Games

Theme: Excellence in Disability Sport

ID: 957

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Introduction: Mood profile is used to identify commonly occurring patterns of mood responses (Terry, et al. 2021). In particular, to assess relationships between moods, performance, psychological wellbeing of athletes. Thus, present study aims to analyse the pre-competitive mood profile in Para athletes who participated in the Brazilian University Games (JUBS).

Methods: This is a descriptive and cross-sectional research, the participants were from the following sports: athletics (n = 20), swimming (n = 7), table tennis (n = 4) and badminton (n = 2), total 33 for athletes (male = 26; female = 7; 26.8 ± 8.7 age). Para athletes had a competitive level: paralympic (n = 1); international (n = 8) and national (n = 24) and types of impairment: amputation (n = 19); impaired limb (n = 8); short stature (n = 2); brain injury (n = 2); impaired muscle power (n = 1) and visual impairment (n = 1). To measure mood, the Brunel Mood Scale (BRUMS) was used. The BRUMS has six subscales of four mood descriptors each, with respondents rating how they feel “right now” on a 5-point Likert-type scale anchored by 0 = not at all and 4 = extremely. In addition, the total mood disorder was evaluated using the formula: [(tension + depression + anger + fatigue + confusion) – vigour + 100].

Results: The results show that the pre-competitive mood profile of Para athletes presented the Iceberg profile. Furthermore, it was observed that the total mood disorder (100.88 ± 9.6) was adequate for pre-competition.

Discussion: This result is considered favourable to performance as it has a higher vigour score when compared to the other negative aspects.

Conclusions: It is concluded that the Para athletes presented an iceberg humour profile, representative of positive mental health and good athletic performance.

Keywords: Brums Scale, wellbeing, athlete

References: Terry, Peter C.; Parsons-Smith, Renée L. (2021) Mood Profiling for Sustainable Mental Health Among Athletes. *Sustainability*, 13,11, 6116.

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The process of coping with disability in the context of adapted sport: Narratives from athletes

Theme: Excellence in Disability Sport

ID: 1086

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Introduction: Disability is experienced by individuals that affects all spheres of life of, so it can be considered an adverse circumstance as it is not consistent with the canonical discourses of some contexts.

Methods: In order to understand the configuration coping process with disability based on the narratives of athletes who participate in adapted sports in Colombia, it was chosen a narrative design in which interviews allowed collecting stories from athletes.

Results: Different conceptions related to Disability are evident. Support networks also appear as a fundamental external factor in inclusion and coping processes. Faced with coping with disability, one of the salient aspects is the fact that disability as such is not always meant as a crisis. Sports practice in adapted sports is significant for athletes, but there are exclusionary dynamics given the lack of access to economic support.

Discussion: Since there are different stereotypes regarding disability that lead to certain attitudes and behaviors that accentuate the experience of disability, these are given by the perception of disability as the condition of a limited other, which are antagonists of the lifestyle that is identified as an ideal and consequently, tends to be avoided and simplified (Gergen, 2007), and this influences in coping process.

Conclusions: Different factors are identified in coping process with disability, in which the sports context is identified a positive factor, that enables the redefinition of disability.

Keywords: disability, coping, narratives, adapted sport

Gergen, K. J. (2007). La autonarración en la vida social. In Estrada, A.M. y Diazgranados, S. (Compiladoras), *Construccionismo social, aportes para el debate y la práctica*. (pp. 153-188). Ediciones Uniandes.

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Inclusive sports and sports for diversity: Critical positions

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1090

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Introduction: From UNESCO, sport has been recognized as a right and as a fundamental element in the development and unity of nations; however, it still has difficulties in its guarantee. This is why a study is generated to interweave the experiences situated in relation to sports practice in different social groups, in order to reflect on the possibilities and underlying social inequalities within inclusive sport.

Methods: Narrative topic design, which allows the dialogue of knowledge from six focus groups, with different actors who participate in the field of sport, such as: athletes with disabilities, non-athletic people with disabilities, coaches, academics, university students and sports leaders. A content analysis was carried out.

Results: In the macro level it is possible to locate that in Colombia sport is a right for everyone; however, in terms of public policy it is difficult to materialize it. Also, some imaginaries about disability are evident, related with stereotypes of illness and the need to overcome it. At the meso level, managers sport and disability actors are active agents in the recognition of a diverse society. In the micro level, the perception of athletes regarded sport as exclusive and focused on achievements.

Discussion: Approaching sport from a critical perspective requires reflections from different actors, to recognize human diversity, as well as the presence of imaginaries of the capable-normative body, to transcend inclusive sport to sport for diversity (Gómez, 2014).

Conclusions: It is important to return to the notion of sport as a right. It is preponderant to move to a new stage of sport for the disability focused on diversity that enables a more participatory and democratic practice.

Keywords: Adapted sport, disability, inclusion

References: Gómez, A. (2014). El multigrupo y la covisualidad: desafíos desde «las y los in-cluidos». *Ponencia presentada en el III Congreso Internacional MISEAL: Nuevos Desafíos para la Inclusión Social y la Equidad en la Educación Superior*. Barcelona, España.

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Parents' intention to support physical activity engagement in youth with cerebral palsy

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1021

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Introduction: Despite the benefits from physical activity, most youth with cerebral palsy do not reach the physical activity recommendations. Previous research has suggested that parents play a pivotal role as facilitators and as a model for physical activity engagement of youth with disabilities. The theory of planned behaviour (TPB; Ajzen & Madden, 1986) provides a theoretical framework for examining the parents' intention to support physical activity engagement for their youth with CP. This study identified factors associated with parents' intention to behave in a supportive way.

Methods: Finnish parents (N= 16) of youth between the ages of 9 and 21 years old were recruited to fill a survey measuring parent's attitude, subjective norms, perceived behavioural control and, intention to support child's physical activity. Descriptive analyses were conducted on study variables. Further, correlation analysis was conducted between the TPB variables and the intention variable. Multiple regression was used to examine the impact of the additional of the three TPB in parental intention to support their child's physical activity engagement.

Results: The results provide support for the adequacy of the TPB for understanding parent's intention towards supporting their child's physical activity.

Discussion: An understanding of parents' intention to support physical activity engagement and factors influencing this, must be established to accurately inform interventions aiming to promote physical activity among youth with CP.

Conclusions: Understanding parents' intention to support their youth with cerebral palsy in participating in physical activity, may assist researchers to identify and develop interventions to promote physical activity participation in youth with cerebral palsy. More data on parental behaviour to corroborate these findings is needed.

Keywords: APA, intention, motivation, facilitators, barriers

References: Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology*, 22(5), 453-474.

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The role of volunteers in adaptive swimming organisation

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1061

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Introduction: Although participation in leisure-time physical activities has many recognized health, psychological, and social benefits, people with disabilities participate in them at a significantly lower rate than people without disabilities. The involvement of volunteers as individual instructors can play an important role in facilitating the enjoyment of these benefits. The aim of this qualitative study was to describe the significance of volunteer instructors in an adaptive swimming organisation from the perspective of swimmers, their parents, and instructors.

Methods: A total of 11 semi-structured interviews were conducted with swimmers, their parents, and volunteer instructors to gain an in-depth understanding of the topic.

Results: The cooperation of the swimmers with the volunteer instructors led to an improvement in the subjective well-being and independence in the daily activities of the swimmers. The organisation increased the participants' socialization opportunities and contributed to the acceptance of disability. Parents mostly appreciated the free time they gained during the swimming lessons and summer camps.

Discussion: The adaptive swimming organisation sets a good example of how the involvement of volunteers can improve the participation of people with any kind of severe disability in leisure-time physical activities. The findings show how adaptive sports organisations can also play a role as informal respite care for family caregivers.

Conclusions: Volunteers have the potential to play an important role in adaptive sports organisations. This not only benefits participants with disabilities, but also their parents and the volunteers themselves.

Keywords: volunteer, adaptive sports, disability, respite care

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Cardiorespiratory fitness in young people and adults with autism spectrum disorder: initial psychomotor assessment

Theme: Physical Activity and Exercise for Health and Well-being

ID: 1063

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Introduction: Individuals with Autism Spectrum Disorder (ASD) adopt a sedentary lifestyle, with harmful effects on functional capacity and body composition, producing low quality of life scores (McCoy et al., 2020). The main purpose of this study was to perform an initial psychomotor assessment, in young people and adults with ASD.

Methods: The sample consisted of 18 individuals with ASD, 14 males and 4 females, between 11 and 44 years old. The sample subjects were evaluated anthropometrically by determining the weight, height, body mass index (BMI) and waist circumference. Cardiorespiratory fitness was assessed using the Six Minute Walk Test (6MWT) and the Chester Step Test (CST).

Results: The sample of the present study, has a mean age of 19 ± 8.20 years; a mean weight of 69.95 ± 18.92 kg; a mean height of 169.39 ± 10.49 cm, a mean BMI of 24.20 ± 5.51 kg/m² and a mean waist circumference of 92.05 ± 21.47 cm. By comparing performance between tests, it was found in the CST was lower than in the 6MWT. HR in CST increases proportionally with increasing load. In summary, 11 participants completed level three, 3 completed level four and 4 completed level five. In our research sample, it was possible to measure the magnitude of cardiorespiratory response in CST compared to 6MWT.

Keywords: autism, assessment, cardiorespiratory fitness, psychomotor

References: McCoy, SM., Morgan, K. (2020). Obesity, physical activity, and sedentary behaviors in adolescents with autism spectrum disorder compared with typically developing peers. *Autism*, 24(2), 387-399.

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German Folk Dance and people with disabilities: an experience report in Brazil

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1113

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Introduction: German Folk Dance (GFD) is a cultural manifestation that has its origins in Germany (Bröcker, 1996). Its main elements are music and the organization of choreographies in a circle, which portray daily life and aspects of German culture. Its characteristics allow the participation of people in different conditions, including those with some kind of disability. This study aimed to describe how the participation of children with disabilities (CWD) occurs in a traditional group of GFD in Brazil.

Methods: Under a qualitative approach, a descriptive study was carried out, characterized as an experience report, based on the researcher's perspective. As a data collection instrument, unsystematic observation was used, recorded in a field diary. This experiment involved a group of GFD with 20 participants aged between 8 and 12 years, divided between female and male, including a girl and a boy with Down Syndrome and two boys with Autistic Disorder. Members attend weekly hour-long meetings.

Results: The participation of CWD in the traditional GFD group occurred naturally and spontaneously, without the need for major accommodations. In certain choreographies it was necessary to make small changes in the teaching process, in order to enable the engagement of all participants. Most times, the decisions regarding choreographic adaptations were made collectively. At times, the adjustments were restricted to the CWD, and consequently to the children who were paired with them.

Discussion: The pedagogical stimuli addressed to the special needs of the participants created an environment that values diversity, favouring interpersonal relationships between CWD and their peers.

Conclusions: It was concluded that the GFD is a cultural manifestation that allows the participation of children with and without disabilities, preserving popular traditions and the feeling of belonging among all members.

Keywords: German Folk Dance, disability, inclusion

References: Bröcker, M. (1996). Folk Dance Revival in Germany. *The World of Music*, 38 (3), 21-36

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Perspectives about inclusive physical education: Descriptive study focused on the autonomous regions of Portugal

Theme: Inclusive Physical Education

ID: 1089

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Introduction: Physical education (PE) class has been seen as the most inclusive context in schools. PE teachers are the key to this process, and their attitudes play a decisive role in their actions. However, in the autonomous regions of Portugal, information about the experiences and perspectives about inclusive PE is scant. Therefore, the aim of the present study is to characterize the experiences and attitudes of PE teachers with children with disabilities in Madeira and Azores islands.

Methods: The sample was composed by 189 PE teachers (61.5%males; age:45.68±SD=7.53) who were teaching in Madeira and Azores islands, in both middle and high school. A sociodemographic questionnaire was used to characterize the teaching experiences with students with different types of disabilities. The Portuguese version of the Multidimensional Attitudes toward Inclusive Education Scale was used to assess the attitudes.

Results: Most of the sample reported previous teaching experience with children with physical disabilities and intellectual and developmental disabilities. However, only 36% had previous contact with children with visual impairment. The teachers classified their teaching experience as “satisfactory” (67.4%) and reported “some confidence” (80.2%) when teaching children with disabilities. Overall, the sample exhibited positive attitudes towards inclusion in the three subscales (i.e., cognitive, affective, and behavioural).

Discussion: The findings highlight a positive perspective of the teachers towards inclusive PE as well as some experience in direct contact with students with disabilities.

Conclusions: More research is needed to understand how attitudes and self-efficacy can impact on the inclusive practices developed by the PE teachers in this specific region of Portugal.

Keywords: inclusive physical education, inclusive, teachers, attitudes, Madeira, Azores

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Correlation between postural control and sport classes in athletes of the Nordic Skiing

Theme: Excellence in Disability Sport

ID: 1056

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Introduction: The functional classification process in adapted sports aims to determine eligibility within a given modality and group athletes with disabilities into sports classes. Sport classes within Para Nordic Skiing (PNS) cover athletes with motor and visual impairments. Athletes with physical disabilities compete in two main categories: standing and sitting. The greatest difficulty in the classification of athletes belonging to the sitting category is to establish reliable parameters for the evaluation of trunk stability, mainly based on the Test-Table-Test (TTT). The purpose of this study was to establish a correlation between the assessment of postural control of athletes in the sitting category and their respective sports classes.

Methods: The sample in this cross-sectional study consisted of four male athletes of PNS, from the Brazilian team. Data collection was based on: Assessment of postural control on a force platform under specific conditions; Documental analysis based on the athletes' sports classification; Comparative analysis between the TTT scores obtained through the classification form, and the force platform data.

Results: The correlation between the TTT scores and the responses obtained through the force platform allowed to identify discrepancies in the performance among athletes of the same sport class, perceptible through the variation in the Center of Pressure.

Discussion: Athletes' performance in tests 3 (Trunk Rotation) and 4 (Side Bend) of TTT showed greater discrepancy than tests 1 (Trunk Extensors) and 2 (Trunk Flexors) when compared to the findings of the force platform.

Conclusions: Establishing correlations between the scores obtained in the TTT and in its replication on the force platform raised hypotheses about fragilities in the current functional classification process.

Keywords: Para Nordic skiing, functional classification

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Pre-service teachers experience with class-wide peer tutoring as a strategy for inclusive physical education

Theme: Inclusive Physical Education

ID: 973

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Introduction: The purpose of this study was to examine the perceptions of physical education pre-service teachers when they taught classroom peer tutoring in an inclusive PE setting.

Methods: Five pre-service PE teachers taught 83 students ages ten to twelve from five different schools. Multiple data collection was used, and data were analyzed using thematic analysis.

Results: The pre-service teachers' fears became aware of stereotypes about students with Down syndrome. The pre-service teachers possessed a thorough content and pedagogical knowledge to apply class-wide peer tutoring in an inclusive PE classroom. They were competent in making adaptations to meet the needs of the student with Down syndrome.

Discussion: From the European literature review, it emerges that Flemish mainstream teachers from Belgium and Irish PE teachers perceived that they were insufficiently trained to implement inclusive education in their classroom practice (McGrath et al., 2019; Vandervieren & Struyf, 2019). Lieberman et al. (2002) recommended that the PETE programme should emphasize the didactic and pedagogical adaptations to apply inclusive education. By training pre-service teachers and supporting them in their practice, the PETE program can help to address this gap.

Conclusions: This study showed that the pre-service PE teachers were convinced to continue incorporating the class-wide peer tutoring intervention into the PETE programme.

Keywords: class-wide peer tutoring, inclusive education, PETE-program

References: Lieberman L.J., Houston-Wilson, C., & Kozub, F.M. (2002). Perceived barriers to including students with visual impairments in general education. *Adapted Physical Activity Quarterly*, 19(3), 364-377.

McGrath, Crawford, & O'Sullivan (2019). 'It's a challenge': Post primary physical education teachers' experiences of and perspectives on inclusive practice with students with disabilities. *European Journal of Adapted Physical Activity*, 12(1):2.

Vandervieren, E. & Struyf, E. (2021) Facing social reality together: investigating a pre-service teacher preparation programme on inclusive education. *International Journal of Inclusive Education*, 25,(13), 1524-1539.

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A water-based intervention for children with acquired brain injury: A case study

Theme: Physical Activity and Exercise for Health and Well-being

ID: 950

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Introduction: Water-based interventions contain a broad range of activities that involve immersion and submersion in water (Kārklīņa et al, 2013), which are also proven beneficial for people with an acquired brain injury (ABI). However, most studies dealt with adults of which the cause of the injury was stroke. Therefore, the purpose of this study is to describe the implementation of a water-based intervention for children).

Methods: A six-year old girl with ABI participated in a ten-week water-based program (one session/week, 30minutes). For the aquatic skills assessment WOTA2 was used during pretest, posttest and retention (four months later), with WTOT as the overall test score (WTOT), consisting out of the water mental adjustment score (WMA) and the skills balance control movement score (WSBM).

Results: Improvements from pre- to posttest were observed for ten out the 24 scored items (WOTA2). WTOT improved 15% (WMA 13% and WSBM 16%). During the retention test (after 16 weeks) all scores remained similar to the ones during posttest, leading to higher scores than during pretest.

Discussion: To the authors' knowledge there are no studies reporting WOTA2 scores for children with ABI, therefore it is difficult to interpret these values. Nevertheless, substantial progress was made during this ten-lesson unit. This better performance was observed as the girl executed the skills more fluent and longer than before.

Conclusions: This case study provides insights into a possible lesson plan for children with ABI during a water-based intervention.

Keywords: aquatics

References: Kārklīņa, B., Declerck, M., & Daly, D. J. (2013). Quantification of aquatic interventions in children with disabilities: A systematic literature review. *International Journal of Aquatic Research and Education*, 7(4), 7.

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Health physical education

Theme: Inclusive Physical Education

ID: 1010

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Introduction: More than seventy years ago, the directive on the so-called Special Physical Education (PE) came into force in Czechoslovakia as a school subject. Later it was renamed to Health Physical Education (HPE) combining therapeutic, preventive and educational work.

Methods: The aim of this historical review is to present the development of this subject during the past 70 years and its reflection in the present time challenges.

Results: Since their beginning, the HPE classes have been determined for children with special educational needs (SEN) in PE: children with movement, respiratory, cardiovascular, metabolic and other disorders. It sought to influence various functional disorders through compensatory, breathing and relaxation exercises. HPE has been taught at universities involved in professional preparation of future PE teachers. Despite long tradition and positive experience, we see a clear decrease in the number of schools offering this subject.

Discussion: HPE has formed an important bridge between medical rehabilitation and regular PE. Recently, its application is rather rare. Factors leading to this situation include: a legal possibility to exempt pupils from PE classes which is overused; insufficient preparation of future teachers and negative attitudes of students and parents to PE. This can deny PE from teaching pupils to care for their own health and to increase their motor competency despite their impairment.

Conclusions: The HPE subject in Czech educational system can be seen as an example of positive practice of organisation a school subject focused on promoting health and developing physical literacy.

Keywords: Adapted PE, special educational needs

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Physical characteristics of FC Porto goalball and para-swimming athletes

Theme: Excellence in Disability Sport

ID: 1077

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Introduction: FC Porto is a worldwide known sports club with an Adapted Sports Department including high-competition teams as goalball and para-swimming. The structure of the department includes head, assistant and strength and conditioning coaches and a health department that performs pre-season tests. Therefore, this study aims to characterize goalball and para-swimming athletes.

Methods: 24 athletes (18 para-swimmers and 6 from goalball) performed 1-RM of chest press, back squat, the knee to wall and shoulder mobility tests. Height, body mass and sum of 6 skinfolds were measured. 5 athletes did not perform back squat and 3 the knee to wall due to their impairment.

Results: Average age and weight were 25,4+6,4 years and 67,0+9,7kg. Athletes with intellectual disability had an average sum of skinfolds of 83,8+31,9mm. 1-RM of chest press and back squat was 45,0+17,2kg and 61,4+30,6kg. Mean value of the difference between limbs was 1,8+1,1cm in the KTW and 5,4+3,5cm in the SM. Average sum of skinfolds of the athletes with motor impairments was and 69,7+27,5mm. 1-RM of chest press was 59,1+24,5kg and back squat 60,8+38,5kg. Mean value of the difference between limbs was 3,0+3,9cm in the KTW and 7,7+7,2cm in the SM. Goalball athletes had an average sum of skinfolds of 81,3+32,4mm. 1-RM of chest press and back squat was 75,0+12,2kg and 120,0+27,6kg. Average value of the difference between limbs was 1,3+1,6cm in the KTW and 3,1+3,0cm in the SM.

Discussion: Athletes with visual impairment had the highest weight, both 1-RM and the lower asymmetries. Athletes with intellectual disability had the lowest weight but the highest sum of skinfolds. The highest differences between limbs in both tests were in the group of motor impairments.

Conclusions: These analyses allow for benchmarks to be established for the in-season monitoring process and to understand the difference between types of disabilities and sports.

Keywords: Para swimming, goalball

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Development and verification of a pilot program for monitoring of late effects of treatment in movement behaviour and sleep in the oncology outpatient dispensary

Theme: Physical Activity and Exercise for Health and Well-being

ID: 986

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Introduction: The aim of the project is to develop and verify a pilot program for monitoring of late effects of treatment in movement behaviour and sleep in patients who suffered from paediatric cancer. Thanks to a great progress in treatment procedures, over 90% of child patients are cured and live to see adolescence and adulthood. Unfortunately, this treatment success is at the cost of quality of life. Surviving patients are a group of population at high risk. There is a significant likelihood that late effects of treatment can occur at older age. Currently, the monitoring does not focus on movement behaviour and sleep, which are an integral component of healthy lifestyle and, at the same time, a critical pillar of prevention of occurrence of the late effects.

Methods: We will use the AX3 Axivity accelerometer to monitor movement behaviour and sleep. The AX3 Axivity accelerometer is a data logger and features a state-of-the-art MEMS 3-axis accelerometer and flash-based on-board memory. The device incorporates a real time quartz clock and temperature sensor. It is ideal for collecting longitudinal movement data and allows investigating sedentary behaviours, physical activity and sleep.

Results: In 2022, the task will be to : 1. Develop a pilot research project to monitor patients' movement behaviour and sleep to investigate late effects of treatment. 2. Conduct pilot monitoring in collaboration with an outpatient clinic. 3. Evaluate data and provide feedback to patients. 4. To propose a final research design for long-term monitoring of patients' movement behavior and sleep.

Discussion: In the Czech Republic, there are no studies that would monitor movement behaviour and sleep of the target group in a long term.

Conclusions: This unique collaboration will become a foundation for a systematic and long-term monitoring of movement behaviour and sleep in the target group and will contribute to optimisation of treatment measures.

Keywords: accelerometer, paediatric cancer, late effects of treatment

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Social cohesion through sport: Social Cohesion Lab

Theme: Social Values in Recreation, Leisure and Rehabilitation

ID: 1034

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Introduction: Project Sport and Social Cohesion Lab brings together the academic and NGO sector in Germany, Netherlands, Ireland, the Czech Republic, Austria, and Switzerland. The project's aim is twofold: First, it elaborates the topic of social cohesion in diverse urban neighbourhoods and generates an understanding of the processes constructing social cohesion through sports-related activities. Second, it supports practitioners (NGOs) delivering social programmes using sports with methods and tools for understanding and evaluation of activities contributing to social cohesion in communities.

Methods: The project employs a Living Lab approach where sports programme organisers, the participants and other stakeholders are brought together to generate an understanding of factors that build social cohesion through sporting activities. Furthermore, a series of focus groups with stakeholders and participants in sports programmes at the national level were organised. They explore i) how the local neighbourhoods and the social cohesion are conceptualised and experienced ii) how sports programmes can support social cohesion in the neighbourhoods.

Results: Czech focus group's outcomes findings distinguish between participants of sporting programmes (organised by a project partner, INEX-SDA) who are mainly Roma children and stakeholders recruited from social workers or public administration officers. Young participants' conception of social cohesion is based on personal experience of having a „safe space“ to meet with their peers, having someone listening to their opinions and being able to engage in movement activities. On the other hand, stakeholders question the very concept of „neighbourhood“ and perceive their clients as individuals or, mostly, as families.

Discussion: The first results reflect on the lack of intercultural activities that bring closer children from drop-in centres (often from risk social backgrounds) and leisure time centres for children (regularly attended by children from the majority). The outcomes confirm the awareness in Czechia, about sport for development-related programmes is low, amongst the social workers or public administrators.

Conclusions: An understanding of potential variables and factors contributing to social cohesion outcomes highlight Initiatives of the Czech project partner INEX-SDA, such as Fair Football League, local and national sport meetings are considered as having great potential as a social cohesion promoter

Keywords: football for all, inclusion, socially excluded localities, community work

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Relationship between health behaviors, cognitive function, problematic internet use and motor proficiency in adolescents with and without chronic health conditions*Theme: Physical Activity and Exercise for Health and Well-being*

ID: 1072

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Introduction: Decreased daily physical activity level and excessive screen time could lead to health problems, lower cognitive performance and poor psychosocial health in adolescents (Oliveira & Guedes, 2016; Bianco et al., 2019; Rayner et al., 2017). This study aimed to explore the relationship between health behaviors, cognitive function, problematic internet use and motor proficiency in adolescents with and without chronic health conditions (CHC).

Methods: Totally 57 adolescents (mean age 13.12 ± 1.33) and 17 adolescents with CHC (mean age 13.59 ± 1.41) such as learning disabilities and physical impairments (e.g., CP, scoliosis, spina bifida) participated in this study. A composite score of the Problematic and Risky Internet Use Screening Scale (PRIUSS) contained social, emotional and risky/ impulsive internet use variables. The health behaviors explored were daily physical activity (PA) level, eating habits, screen-based behaviors and somatic and psychological health complaints. Bruininks-Oseretsky Test (BOT-2) of Motor Proficiency was used to identify movement skills. Vienna test system subtests were used to assess cognitive functions.

Results: Overall BOT-2 scores were not significantly different between the two groups ($p = .73$), while significant differences were found in balance and running & agility subtests ($p < .05$). Cognition (Cognitron) test results presented significant differences between groups in reaction time for correct reactions subtests $2.087 \pm 0.398s$ vs $2.439 \pm 1.152 s$ ($p = .002$), and not significant for incorrect reactions ($2.027 \pm 0.713s$ vs $2.501 \pm 1.169s$) and for the number of correct reactions 53.86 ± 3.94 vs 50.59 ± 6.94 and number of incorrect reactions 6.14 ± 3.94 vs 9.41 ± 6.94 . In Reaction Time tests differences were not significant for results of responses $285.64 \pm 65.65ms$ vs $345.65 \pm 181.21ms$

In both groups all psychological health complaints had significant moderate correlation with PRIUSS score with the strongest correlation with nervousness for adolescents without CHC ($r = .493$, $p = .001$) and difficulty falling asleep in adolescents without CHC ($r = .417$, $p = .001$). For adolescents with CHC multiple health complaints and eating fruits and vegetables had strongest association with the PRIUSS total outcomes ($\beta = .673$, $p = .006$ and $\beta = -.294$, $p = .032$, respectively), explaining 42.7 % of variance in the PIU scores. For adolescents without CHC use screen time during weekends, nervousness and use ready-to-use packaged food had strongest associations with the total PRIUSS scores ($\beta = .286$, $p = .024$, and $\beta = .311$, $p = .035$, and $\beta = .2$, $p = .029$ respectively), explaining 45.7 % of variance in PIU scores.

Discussion: Adolescents with CHC did not present significantly different outcomes in total scores of movement and cognitive tests, while results were lower in some subtests. Multiple regression analyses revealed significant association between limited consumption of fruits and vegetables and PIU score in adolescents with CHC. Furthermore, multiple (more than four per week) subjective health complaints were significantly associated with PIU scores in adolescents with CHC, while nervousness was the only psychological health issue that presented significant association with PIU total score in adolescents without CHC.

Conclusions: The present study provides empirical evidence for comparative outcomes and associations between PIU and subjective health complaints and unhealthy lifestyle behaviors in adolescents with and without chronic health conditions.

Keywords: adolescents, physical activity, screen time

The research was done in the framework of the Latvian Council of Science Fundamental and Applied Research Project No lzp-2019/1-0152 “Comprehensive Assessment and Support Program to Reduce Screen Time Related Health Risks in Adolescents”.

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Presentation Type: Workshop

Physical activity for older adults

Theme: Inclusive Physical Education

Presentation Type: Workshop

ID: 1065

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Purpose: This workshop aims to present a few physical activity samples covered in the course of “Physical Activity for Elderly”, in the European Diploma Program in Adapted Physical Activity (EUDAPA).

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Integrative neuromuscular training exercise intervention for autistic children

Theme: Physical Activity and Exercise for Health and Well-being

Presentation Type: Workshop

ID: 949

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**** Cardiff Metropolitan University, School of Sport and Health Sciences, Wales

There are limited resources about coaching methods and exercise programs when designing an exercise class for autistic children. **Purpose:** To provide an interactive, engaging workshop demonstrating exercises and coaching cues that have been implemented in a low-cost structured school-based integrative neuromuscular training (INT) intervention that has been found to elicit significant improvements on behaviour and physical fitness among autistic children (Coffey et al., 2021). **Tools:** iPad, Ladders, Hula Hoops, Balloons, Bean Bags.

Discussion: Results support the implementation of a structured, progressive INT intervention to increase physical fitness and improve behaviours, with more pronounced results for children with more severe autistic symptoms. **Conclusions:** We aim to inform fitness specialists, teachers and parents/guardians how to overcome some of the challenges associated with exercise, designing, implementing and progressing exercise for autistic children.

Keywords: paediatric exercise, physical fitness

References: Coffey, C., Carey, M., Kinsella, S., Byrne, P.J., Sheehan, D., Lloyd, R.S., 2021. Exercise Programming for Children with Autism Spectrum Disorder. *Strength and Conditioning Journal*, 43(2), pp.64-74.

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Inclusive Dance for all – demonstrating the activity of a “Dance Assist”

Theme: Social Values in Recreation, Leisure and Rehabilitation

Presentation Type: Workshop

ID: 961

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Purpose: With the intention to demonstrate this working method, we (Maria D. and Maria N.) would like to lead a dance workshop for interested participants of the congress. No dance experience is needed but the willingness to learn some improvisational and some choreographed movements. The experience of a common inclusive activity shall be in the focus.

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The inclusion of adapted sports in physical education classes: Experiencing adapted physical activities and methodological suggestions

Theme: Inclusive Physical Education

Presentation Type: Workshop

ID: 1140

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Purpose: This work aims to raise awareness among professionals in the field of Physical Education and Sport about the need to carry out activities that enhance the inclusion of students with disabilities in classes of Physical Education. It is also intended that participants can experience various physical-sports activities for people with disabilities.

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Special Olympics Czech Republic: Inclusion through sport

Theme: Excellence in Disability Sport

Presentation Type: Video Presentation

ID: 1005

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** Special Olympics Czech Republic, Czechia

Introduction: The short video is celebrating 30 years of Special Olympics (SO) Czech Republic and presenting this SO sport movement as example of good practice in inclusion through sport. The video is presenting ongoing sport events as possibilities of volunteering and internships of university students. Activities supporting social cohesion by sport are presented in year-round collection of events: 1) “Interweaving” unified event 2) Unified sports competition 3) year-round events supporting inclusion.

Methods: Collection of video materials from events.

The criteria for selection:

1. year-round time collection from period 2020/2022 (fluctuating COVID restrictions)
2. activities supporting social cohesion – social promotional events through sport
3. sport competitions, camps, workshops, and involvement of students in the form of an internship

Results: The video of sub-topics a) Sport events; b) Seminars & workshops; c) Social cohesion & Internship; d) Interweaving is presented.

Discussion: Discussion with audience about Special Olympics as flagship of the rights for recognition of intellectually disabled athletes. The recognition and inclusion pre-activities of Special Olympics World games Berlin 2023.

Conclusions: The Special Olympics Czech Republic is a great example of good practice in the field of sport and inclusion. The organization is supporting athletes with intellectual disability and their families for 30 years.

Key words: internship, volunteering, unified sport, Join in project

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Mini-Symposium

Women, disability and inclusive sport

Theme: Inclusive Physical Education

Presentation Type: Mini-Symposium

ID: 1080

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** Universidad Politecnica de Madrid, Health and Human Performance, Spain

*** University of Seville, Human movement and sport performance, Spain

Problem: This mini-symposium goal is to analyze the causes of barriers to sports participation of women with disabilities.

Purpose: To analyse the situation of women with disabilities in the practice of PA and sport as a way of social inclusion, study the reasons why they find a greater number of barriers in access to sports practice, facilitators, visualize the main needs and to develop an action plan.

Tools: A network of 6 universities in Spain implemented different action lines, highlighting the current situation of women with disabilities in sport according to different scopes. **Major findings:** Main themes studied by WODIS researchers were guiding the different meetings and a wide literature review was performed using the terms “women”, “disability”, “sport” and/or “inclusion”. In total 239 were find structured in: Woman with disability (29), Situation per area (80), Scientific evidence (31), Legal documents and rights (56), Good practices (15), Institutional coordination (3). Also, 2 resources were generated: 1 technical report (de Asís, 2021) and 1 photo exhibition.

Discussion: Commitment to promoting women's sports practice is notorious in Spain. However, current data indicate that, of the 13,000 people with disabilities with sport license in Spain, almost 3,500 (24%) are women, which represents less than a quarter of the total and less than 1% of the total of women with disabilities in Spain aged between 15 and 49 (INE 2008).

Conclusions: Exclusion of women with disabilities in sport studies is a mirror of the exclusion situation from real access to PA and sport. Awareness in the field of APA must be addressed to change this situation.

Key words: Women, Sport, Disability, Inclusion, Barriers to sports practice

References: European Commission. *European Disability Strategy 2010-2020: A Renewed Commitment to a Barrier-Free Europe*

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Mental Health on the Move project: Challenges and new perspectives about the impact of COVID-19 pandemic

Theme: Physical Activity and Exercise for Health and Well-being

Presentation Type: Mini-Symposium

ID: 987

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Purpose: Our aims are to i) present the Mental Health on the Move project, sharing methodological approaches; ii) describe the strategies applied to support participants to (re)engage in the PA program across the different periods of COVID-19 outbreak; iii) highlight a badminton-based program using an intervention mapping approach.

Major findings: Our main results are: i) a variety of methodological approaches are essential to successfully develop a PA program for people with severe mental illness (SMI); ii) motivational and supportive strategies are important to reengage participants in PA after the lockdown period; iii) a badminton-based program demonstrated to be an innovative and suitable approach to provide mental health benefits.

Discussion: It will take time to know exactly the impact of the COVID-19 on physical and mental health, and there is a lack of studies in SMI field. Altogether, our evidence suggest that it is necessary to continue supporting this population, providing PA opportunities, and applying innovative approaches.

Support: IPDJ; BWF

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Special Olympics fundamentals: Returning to a new normal

Theme: Excellence in Disability Sport

Presentation Type: Mini-Symposium

ID: 1134

Jenni Häkkinen*

* Special Olympics Europe Eurasia, Finland

Purpose: Special Olympics mini symposium will include 3 presentations: • Special Olympics Portugal: local Special Olympics activities, • The Impact of Special Olympics Unified Schools in Greece, • Special Olympics World Games Berlin 2023: an inclusive major sports event.

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Children with disabilities in physical education - from marginalization to participation

Theme: Inclusive Physical Education

Presentation Type: Mini-Symposium

ID: 1069

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** University of Graz, Institute for Human Movement Science, Sport and Health, Austria

*** University of Vienna, Austria

Purpose: In the context of inclusion, the presentation examines the question of performance equity in inclusive PE and tries to consider the category disability. From an ableism-critical perspective, it is shown that current approaches to teaching in German-speaking sport pedagogy tend to overlook people with disabilities in their immanent performance narratives - which foster exclusion. The analysis leads to suggestions, which conclusions can be drawn for a diversity-sensitive PE. The mini-symposium addresses to what extent students with disabilities are ignored in PE education theory building as well as in curricula and what participatory PE can look like.

Presentation I: Questioning performance equity in inclusive PE

Presenters: Martin Giese & Stefan Meier

In the context of inclusion, the presentation examines the question of performance equity in inclusive PE and tries to consider the category disability. From an ableism-critical perspective, it is shown that current approaches to teaching in German-speaking sport pedagogy tend to overlook people with disabilities in their immanent performance narratives - which foster exclusion. The analysis leads to suggestions, which conclusions can be drawn for a diversity-sensitive PE.

Presentation II: Questioning marginalization in Finnish Core Curriculum

Presenters: Christopher Mihajlovic & Stefan Meier

The analysis of the Finnish Core Curriculum tries to gain insight into the understanding of inclusion within the context of PE policy in Finland and particularly focuses on the inclusion of students having SEN. The findings demonstrate that the official documents build upon a broad understanding of inclusion and diversity, which is not only restricted to students with disabilities. However, the PE curricula provide few practical implications for teaching in diverse classes which may stem from inconsistency across the analysed documents in considering diversity issues.

Presentation III: Questioning participatory instructional development

Presenters: Sebastian Ruin, Jana Baumgärtner & Christoph Kreinbacher-Bekerle

The third presentation deals with a participatory project in Austrian middle schools, in which the possibilities and limits of diversity-conscious instructional

development in PE are to be explored. Here, teachers, students and university lectures cooperate at three selected schools. The process is scientifically accompanied with quantitative and qualitative research. In this presentation, findings from qualitative interview studies with students (n=42; 24 female) and teachers (n=11; 6 female) will be discussed. The focus is on how to implement participatory instructional development in a way that allows everyone's voices to be heard – including those who are otherwise often marginalized.

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Global Matrix of Para Report Cards - European snapshot*Theme: Inclusive Physical Education**Presentation Type: Mini-Symposium*

ID: 944

Kwok Ng*, **Piritta Asunta****, **Sean Healy*****, **Jurate Pozeriene******, **Salomé Aubert**

* University of Eastern Finland School of Educational Sciences and Psychology, Finland & University of Limerick, Dept of Physical Education and Sport Sciences Ireland

** JAMK University of Applied Sciences, LIKES

*** Dublin City University, School of Nursing, Psychotherapy and Community Health

**** Lithuanian Sports University, Department of Health Promotion and Rehabilitation

Introduction: The global matrix on physical activity report cards are now in its four iteration. It started with 15 countries in 2014 and has rapidly grown to over 50 countries in 2021. This is the first time that countries are collectively reporting on disability specific report card data and converting the best available data into easy to understand grades on 10 known indicators in relations to physical activity and sport for children and adolescents. **Purpose:** The purpose of this mini-symposium is to showcase the work from European countries involved in the disability specific global matrix physical activity report cards. There are different presentations that provide detail about how data were collected, what are the grades from the indicators in these countries and what opportunities arise from collating and disseminating the information. **Description of the activities:** There are three planned presentations and discussions from European researchers involved in the disability specific global matrix. Each of the involved countries have collected the best data and the presentations would share the results of these data in transformed grades that have been audited from external parties. Grades have also been discussed with stakeholders in children and adolescent disability sports and physical activity. Furthermore, there would be presentations about how the grades can be used for future national and international surveillance purposes. There are opportunities to discuss grading disability data and influencing policy. **Equipment and space required:** Room for presentation, and panel arena for presenters to take part in discussions. Opportunities for audience interaction through questions and answers.

Major outcomes: To disseminate the European findings of the disability specific global matrix physical activity report cards to the audience. To facilitate presenting researchers to find solutions, opportunities and identify challenges for future surveillance of physical activity for children and adolescents with disabilities.

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Presentation I: Results from the Finland's Para Report Card 2022*Theme: Physical Activity and Exercise for Health and Well-being**Presentation Type: Mini-Symposium*

ID: 1044

Piritta Asunta*, **Katariina Kämppi****, **Aija Saari****, **Kwok Ng*****, **Tuija Tammelin****

* LIKES research Centre for Physical Activity and Health, JAMK University of Applied Sciences, Finland

** Finnish Paralympic Committee, Physical Activity

*** University of Eastern Finland School of Educational Sciences and Psychology, Finland & University of Limerick, Dept of Physical Education and Sport Sciences Ireland

Purpose: The aim was to summarize the results of the Finnish Report Card and highlight how these grades are interpreted by stakeholders.

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Presentation II: Disability specific Physical Activity Para Report Card from Ireland

Theme: Physical Activity and Exercise for Health and Well-being

Presentation Type: Mini-Symposium

ID: 1067

Sean Healy*, Kwok Ng, Wesley O'Brien***, Louise O'Connor****, Angela Carlin*******

* Dublin City University, School of Nursing, Psychotherapy and Community Health, Ireland

** University of Eastern Finland School of Educational Sciences and Psychology, Finland & University of Limerick, Dept of Physical Education and Sport Sciences Ireland

***University College Cork, Ireland

**** Institute of Public Health, Ireland

***** Ulster University, Northern Ireland

Purpose: The purpose of this presentation is to provide an overview of the Report Card on physical activity for children and adolescents with disabilities in Ireland. The presentation provides details about how data were collected with regards to the grades for the Report Card indicators in Ireland, and opportunities arising from collating and disseminating the information.

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Presentation III: Physical Activity Para Report Card of children and adolescents living with disabilities in Lithuania

Theme: Inclusive Physical Education

Presentation Type: Mini-Symposium

ID: 1074

Jurate Pozeriene*, Arunas Emeljenovas, Diana Reklaitiene**, Vida Ostaseviciene*, Kestutis Skucas**, Vaida Pokvytyte*****

* Lithuanian Sports University, Lithuania

Purpose: The purpose of the study is to advance knowledge on the current situation regarding PA levels of students with disabilities identify gaps in current knowledge.

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