# ONLINE ISAPA2021

# BOOK OF ABSTRACTS

JUNE 15–18, 2021
JYVÄSKYLÄ, FINLAND


UNIVERSITY OF JYVÄSKYLÄ

SYMPOSIUM THEME:
## "STRONGER TOGETHER"

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INTERNATIONAL SYMPOSIUM OF ADAPTED PHYSICAL ACTIVITY

ISAPA2021
INTERNATIONAL SYMPOSIUM OF ADAPTED PHYSICAL ACTIVITY

# Online ISAPA 2021

# Quality partnerships in Adapted Physical Activity: Stronger Together!

## Book of abstracts

Editors: Kwok Ng, Pauli Rintala, Aada Kandzia, Anni Lindeman

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The 23rd International Symposium of Adapted Physical Activity (Online ISAPA 2021) and the Nordic Congress of Adapted Physical Activity, hosted by University of Jyväskylä, Finland. 15th-18th June 2021.

## Organising committee

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# Pauli Rintala

# Chair of organising committee Online ISAPA 2021

Welcome to Online ISAPA 2021 Symposium and the Nordic Congress of Adapted Physical Activity

Dear Symposium participants

It is my great pleasure to invite you to the first Online ISAPA (International Symposium of Adapted Physical Activity) at this strange, pandemic affected year of 2021. We, as organizers, are so pleased to be able to organize this symposium even if we are still suffering of COVID-19 in many countries of the world. I am a little bit disappointed that you are not able, physically to be here in Jyväskylä, Finland due to current circumstances, but at the same time I am delighted that so many of you are able to participate because of the virtual symposium.

The theme of the Symposium is "Quality Partnerships in Adapted Physical Activity: Stronger Together!" which conveys the message that we need each other in life, as professionals but also as human beings. We become stronger in whatever we do when we are able to cooperate and choose to learn from each other. Again, in the symposium we want to help you to be able share reliable, latest knowledge, but also to take new ideas back to your own countries.

This book of abstracts will introduce to you all the oral and poster presentations, as well as the abstracts of innovative sessions and the mini symposia. We thank you for submitting your abstract, and trust that this book of abstracts helps you to see the diverse research and reports featured in the Online ISAPA 2021. Moreover, it will serve as a tangible memory of the Online ISAPA 2021.

Online ISAPA 2021 is organized by the Faculty of Sport and Health Sciences, University of Jyväskylä with the joint effort with Finnish Society of Sport Sciences ( www.lts.fi ) and our other Finnish partners. We are all pleased that International Federation of Adapted Physical Activity (IFAPA) granted us this symposium.

Again, I want to extend my warmest welcome to you, and wish you a memorable symposium.

Sincerely,

Pauli Rintala, PhD

Professor of Adapted Physical Activity

Chair of the Organizing Committee

Chair of the Scientific Committee

# David Legg, President of IFAPA

On behalf of the IFAPA Board of Directors please accept my warmest and most sincere welcome to ISAPA 2021.

The past year has certainly been interesting and required us to be at our adaptive and creative best and the scholarship presented to you this week will be a reflection of our expertise and willingness to challenge assumptions and push boundaries.

My heartfelt thanks and appreciation to those who have helped make this edition of ISAPA an outstanding, enjoyable and productive experience.

Respectfully,

David Legg

David Legg, Ph.D., Professor

President, International Federation of Adapted Physical Activity (IFAPA)

Department of Health and Physical Education

Mount Royal University

Calgary, Canada

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|---|---|---|---|---|---|---|
| New York (EST) | Finland (EEST) | Beijing (CST) | | | | |
| 2:30 | 09:30 | 14:30 | | **Opening the day 2** | | **Opening the day 4** |
| 3:00 | 10:00 | 15:00 | | Parallel Sessions 3 Mini-Symposium, Innovative, Oral | | Parallel Sessions 7 Mini-Symposium, Innovative, Oral |
| 3:30 | 10:30 | 15:30 | | | | |
| 4:00 | 11:00 | 16:00 | | **BREAK** | | **BREAK** |
| 4:30 | 11:30 | 16:30 | | Keynote 3 Erwin Borremans | **Opening the day 3** | Keynote 5 Mina Mojahedi |
| 5:00 | 12:00 | 17:00 | | | Nordic Panel 2 | |
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| 6:30 | 13:30 | 18:30 | **ONLINE ISAPA Opening Ceremony** | | **Special Olympics SOCIAL EVENT** | |
| 7:00 | 14:00 | 19:00 | | **BREAK** | | **BREAK** |
| 7:30 | 14:30 | 19:30 | Keynote 1 Erja Portegijs | Parallel Sessions 4 Mini-Symposium, Innovative, Oral | **BREAK** | Keynote 6 Ian Brittain |
| 8:00 | 15:00 | 20:00 | | | Parallel Sessions 5 Mini-Symposium, Innovative, Oral | |
| 8:30 | 15:30 | 20:30 | **BREAK** | **BREAK** | | **BREAK** |
| 9:00 | 16:00 | 21:00 | Parallel Sessions 1 Innovative, Oral | **ICCSPE SOCIAL EVENT** | **BREAK** | **ONLINE ISAPA Closing Ceremony** |
| 9:30 | 16:30 | 21:30 | | | Keynote 4 Janine Coates | |
| 10:00 | 17:00 | 22:00 | **BREAK** | **IFAPA General Assembly** | | |
| 10:30 | 17:30 | 22:30 | Keynote 2 TA Loeffler & Kim White | | **BREAK** | |
| 11:00 | 18:00 | 23:00 | | | Rarick Lecture Keynote 5 Viviene Temple | |
| 11:30 | 18:30 | 23:30 | **BREAK** | | | |
| 12:00 | 19:00 | 00:00 | Parallel Sessions 2 Mini-Symposium, Innovative, Oral | | **BREAK** | |
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| 13:30 | 20:30 | 01:30 | | | | |

# ISAPA2021

## TUESDAY 15th

## Parallel sessions 1

| Time (24h clock) | | | ORAL SESSION | Session 1<br>Chair: Pauli Rintala | | ORAL SESSION | Session 2<br>Chair: Meghann Lloyd | | INNOVATIVE SESSION | Session 3<br>Chair: Ali Brian | | INNOVATIVE SESSION | Session 4<br>Chair: Katja Borodulin | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York (EST) | Finland (EEST) | Beijing (CST) | **Keywords:** Aging, Municipal services of adapted physical activity, Exercise | | | **Keywords:** ASD | | | **Keywords**: Visual impairment, Adapted physical activity, Inclusion | | | **Keywords**: Elderly people, outdoor activities, functional capacity | | |
| | | | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** |
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York (EST) | Finland (EEST) | Beijing (CST) | **Keywords:** Wheelchair, Adaptive snowsports, health promotion, wheelchair tennis, ableism, institutional practices | | | **Keywords:** Visual impairment | | | **Keywords:** Scuba diving, People with disability | | | **Keywords**: Inclusion, Quality Participation, Children experiencing disability | | |
| | | | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** |
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## WEDNESDAY 16th

### Parallel sessions 3

| Time (24h clock) | | | ORAL SESSION | Session 1 Chair: Susan Marron | | ORAL SESSION | Session 2 Chair: Kajsa Jerlinder | | INNOVATIVE SESSION | Session 3 Chair: Kieran Wall | | MINI SYMPOSIUM | Session 4 Chair: Kwok Ng | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York (EST) | Finland (EEST) | Beijing (CST) | **Keywords:** Adapted physical education, motor learning | | | **Keywords:** Adapted physical education, Inclusion, Deaf sport | | | **Keywords:** Inclusion, Outdoor | | | **Keywords**: Functional limitations, Adapted physical education, Washington group, Questionnaire development, Data | | |
| | | | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** |
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York (EST) | Finland (EEST) | Beijing (CST) | **Keywords:** COVID-19, Online physical activity, Inclusion | | | **Keywords:** Emancipatory research, Healthy lifestyle behaviors, Online, Elderly, Lockdown | | | **Keywords:** Parasport, excergaming, stigma | | | **Keywords:** Sustainable development, Adapted physical education, educational technology, COVID-19 | | | **Keywords:** Accessibility, Inclusion, Physical Education | | |
| | | | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** |
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York (EST) | Finland (EEST) | Beijing (CST) | **Keywords:** Intellectual disabilities | | | **Keywords:** Adapted physical education, COVID-19, Professional training, Inclusion, Intellectual disabilities | | | **Keywords:** Coaching, health, Physical functional capacity, Adapted physical education | | | **Keywords**: Special Olympics, Berlin 2023, Partnerships, Major sports events | | |
| | | | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** |
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### Parallel sessions 6

| Time (24h clock) | | | ORAL SESSION | Session 1 Chair: Piritta Asunta | | ORAL SESSION | Session 2 Chair: Diana Reklaitiene | | INNOVATIVE SESSION | Session 3 Chair: A. Colombo Dougovito | | MINI SYMPOSIUM | Session 4 Chair: Michelle Grenier | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York (EST) | Finland (EEST) | Beijing (CST) | **Keywords:** Special Olympics, Athletes, Down Syndrome, Dance | | | **Keywords:** Cerebral palsy, Parasports, Equal conditions | | | **Keywords:** Tablec application, Social media, ASD, Accessible methods | | | **Keywords**: Inclusion, Physical education, Social construction | | |
| | | | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** |
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## FRIDAY 18th

### Parallel sessions 7

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York (EST) | Finland (EEST) | Beijing (CST) | **Keywords:** Parasport, Athletes, Deaf, Sustainable development, Coach education, Policy perspectives | | | **Keywords:** Disability sport, Sport policy, Inclusion Wheelchair, Community-dwelling | | | **Keywords:** Paralympic sport, Inclusion | | | **Keywords**: Inclusion, Sport, Practice, Children, Youth | | |
| | | | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** |
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### Parallel sessions 7

| Time (24h clock) | | | ORAL SESSION | Session 1 Chair: Vesa Linnamo | | ORAL SESSION | Session 2 Chair: Yeshayahu Hutzler | | INNOVATIVE SESSION | Session 3 Chair: Kati Karinharju | | MINI SYMPOSIUM | Session 4 Chair: C. Van Lindert | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York (EST) | Finland (EEST) | Beijing (CST) | **Keywords:** Parasport, Coaching, Clinical settings, attitudes, equity, COVID-19 | | | **Keywords:** Wheelchair, Goalball, Exergames, Mobile | | | **Keywords:** Mobile application, Sustainable education, Accessibility | | | **Keywords**: Disability sport policy, Cross-national | | |
| | | | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** | **Title** | **ID** | **Presenting author** |
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# Keynote presenters

## Erja Portegijs

***Facilitating outdoor mobility and activity in old age: person-environment interactions***

Erja Portegijs, PhD, is senior researcher at the Gerontology Research Center (GEREC) and the Faculty of Health and Sport Sciences at the University of Jyväskylä. She has a broad research experience in the field of gerontology and sport sciences. She studies the interplay between individual and environmental factors and how these affect outdoor mobility and physical activity in old age and active aging more in general. She is especially interested in aspects of the built and natural environment enabling an active life for older adults in the face of mobility decline. In her research, she utilizes interdisciplinary research

Methods combining epidemiological data on health, function and activity of older people with geographic data and novel map-based data of older adults. Currently, Portegijs is P.I. of the three-year project 'Places of Active Aging' funded by the Finnish Ministry of Education and Culture. She is one of the first to study map-based data on environmental experiences and activity locations, and reasons for being active at specific locations in populations over 75 years of age. Research results may help to design environments conducive of active aging.

Weblink: https://www.jyu.fi/sport/fi/tiedekunta/henkilosto/opetus-tutkimus/portegijs-erja

TA Loeffler & Kim White

***"Oh, the places we will go: exploring inclusive outdoor physical activity in two voices"***

Dr. TA Loeffler brings 30 years of expertise leading people through significant life-changing experiences to every facet of her work. Her work and adventures have taken her to 52 different countries and all seven continents. TA has completed 6 and 4/5 of "The Seven Summits," the highest peak on all seven continents. In 2020, TA was named to the "Canada's 90 Greatest Explorers List" by Canadian Geographic.

As a Professor of Outdoor Recreation and Physical Education at Memorial University of Newfoundland, TA has developed a reputation for excellence in experiential education because her students are more likely to be outside chasing icebergs than sitting in a classroom. TA inspires hope, possibility, and vision in those whose lives she touches. Over the past fifteen years, TA has shared her message of "Big Dreams, Big Goals" with over 100,000 youth in the province of Newfoundland and Labrador.

TA's work in the area of adapted outdoor activity, including the founding the Newfoundland and Labrador Outdoor Inclusion Summit, has impacted the practices of many agencies that work with persons with disabilities within her province. TA is a recognized expert in the province regarding physical activity, outdoor recreation, and gender.

Website: www.taloeffler.com

**Kim White** is from St. John's, Newfoundland & Labrador, Canada. Kim has a Bachelor of Arts and a Bachelor of Education from Memorial University of Newfoundland. Her career spans literacy/ adult education, career & employment services, poverty reduction & community development and accessibility & inclusion.

Kim has lived with a physical disability since age 3; she uses braces & crutches and a manual wheelchair for mobility. Kim's lived experience with aging with a disability and recent health changes kickstarted her focus on inclusion in recreation, sport & physical activities. With support from Dr. TA Loeffler, Professor with the School of Human Kinetics & Recreation, Memorial University of Newfoundland, Kim is exploring the world of adaptive physical activities. for her own health and well-being. Her goal in sharing these explorations with others is to support more opportunities for persons with disabilities to live full and active lives.

Kim has been involved in many facets of inclusion including accessibility of performance arts and integrated dance as well as providing support to the Deaf community in Newfoundland & Labrador. Kim received the 2018 Newfoundland & Labrador Human Rights Award for her work in the community-based sector and as a disability rights advocate.

## Erwin Borremans

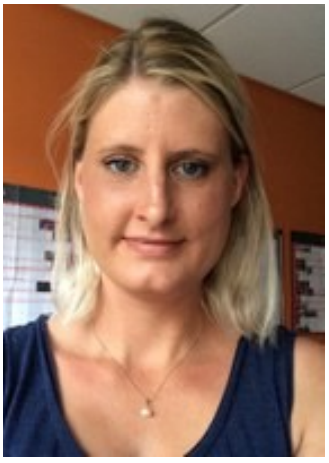
***"Quality partnerships adapted physical education in Finland - stronger and more active together"***

Dr. Erwin Borremans is lecturer in adapted physical education in LIVE Vocational College, Finland. He is the director of the APE-programs for the LIVE Vocational College's campuses spread across the southern region of Finland. Erwin has worked closely with children and youth with special educational needs in their school settings over the last 20 years. Erwin gained his PhD from the University of Jyväskylä. His study was on physical fitness and physical activity in adolescents with Asperger Syndrome. Erwin and his co-workers have had particular success integrating adapted outdoor education and outdoor physical activity into the special education programmes of their vocational institute. This has included local outdoor programming and residential programmes in Finland for students with both physical and learning disabilities.

Weblinks: Erwin's instagram: www.instagram.com/soveltavaliikunta/
Live Youtube-channel: www.youtube.com/channel/UCumFrLE4jZuu2s1UXXzhFGw

## Janine Coates

***"Making Methods work: moving toward more inclusive research with young people who have special educational needs and disability (SEND)"***



Dr. Janine Coates is a Lecturer in Qualitative Research Methods at Loughborough University, who has worked closely with children and young people with special educational needs and disabilities (SEND) in education settings over the last 15 years. Janine has expertise in the use of novel research

Methods to examine young people's experience of inclusive physical activity, physical education and sport, ensuring young people's voices are at the centre of the work she does.

Weblink: www.lboro.ac.uk/departments/ssehs/staff/janine-coates/

## G. Lawrence Rarick Memorial Lecture Viviene Temple

***Steps and stepping up: Special Olympics program responses during the COVID-19 pandemic***

Viviene Temple, PhD, is a Professor at the University of Victoria in Canada. Her research focuses on motor development and health behaviours of adults with intellectual disabilities. Viviene has a long-standing involvement with Special Olympics as a head coach, mentor, and active researcher in local, national, and international contexts

Website: http://web.uvic.ca/~vtemple/.

## Mina Mojtahedi

***"Paradigm shift from patient to rights-holder: What do rights of persons with disabilities mean in adapted physical activity?"***

Mina Mojtahedi, PhD, is the Senior Adviser for non-discrimination at the Ministry for Foreign Affairs of Finland. Prior to her current position, Mina worked for The Finnish League for Human Rights where she led a project on promoting human rights in sports. Mina has also worked for the International Red Cross Red Crescent Movement as Disability Inclusion Adviser promoting inclusion of persons with disabilities in humanitarian contexts, and for Threshold Association, a Finnish organization of persons with disabilities, managing disability rights projects in developing countries. Mina's background is in Nutritional Sciences and in sports. Her doctoral research at the University of Illinois, USA, focused on nutrition, physical activity and body composition of persons with disabilities and older persons.

In wheelchair basketball she has won three US National Championships with the University of Illinois team, and two Bundesliga Championships and European Champions Cup as a professional athlete with RSV Lahn-Dill. She was also a member of Finland's national wheelchair curling team at the Sochi 2014 Paralympics and won a bronze medal at the 2015 World Wheelchair Curling Championships. Since ending her athletic career, Mina was the President of Finland's Paralympic Committee and she continues to coach wheelchair basketball.

## Ian Brittain

***"Social legacies of the Paralympic Games"***


Dr. Ian Brittain is an Associate Professor in the Centre for Business in Society at Coventry University, UK. He specialises in sociological and historical aspects of Paralympic and disability sport, especially with reference to the impact of the Paralympic Games upon the wider society. He is also the Heritage Advisor to the International Wheelchair and Amputee Sports Federation (IWAS) and has attended the last five summer Paralympic Games.

Weblink: https://pureportal.coventry.ac.uk/en/persons/ian-brittain

# Nordic Panels

## Nordic Panel 1

**June 16th 13-14 (EEST, Finland)**

***Assistive devices for physical activity in the Nordic countries***

Procurement, adaptation and use of assistive devices for physical activity are different within the Nordic countries. This panel will start with a description of how the system works in Finland, Sweden, Denmark and Norway. Then, a 30 minutes panel discussion will follow. Main focus will be on good examples from the different countries and on how the Nordic countries can cooperate better in the field of assistive devices for physical activity. Questions to the panelists can be sent electronically during the session. The panel is chaired by physiotherapist Berit Gjessing from Norway.

**The Panelists**

Anita Klindt**,** Parasport Danmark

Johanna Sakko**,** Malike, Finland

Viljar Aasan**,** Beitostølen Healthsports Centre, Norway

Leif Thorstenson**,** Parasport Sweden

## Nordic Panel 2

**June 17th 12–13.25 (EEST, Finland)**

***How are national sporting organizations working to include more persons with disabilities into sport? Reflections from the Nordic countries.***

Each Nordic country has their own unique path towards inclusion. Consequently, disability sports or parasports are organized different ways from Norway's full inclusion model to other countries more or less included systems. In this panel representatives from Denmark, Finland, Iceland, Norway and Sweden reflect on parasport recruitment successes and challenges. Last 25 minutes of the panel is open to online discussion. The panel is organised by the Finnish Paralympic Committee in co-operation with the ISAPA organisers, and chaired by the general secretary Riikka Juntunen.

**The Panelists**

Peter Kock Hansen, Development Manager, Parasport Danmark

Aija Saari, Research manager, Finnish Paralympic Committee

Ingi Þór Einarsson, Lector and researcher at Reykjavik University and High-performance coordinator for NPC Iceland

Mads Andreassen, Head of Activity Development, Norwegian Olympic and Paralympic Committee and Confederation of Sports

Linda Torége, Development manager, Parasport Sweden

# Mini symposia

## INCLUSION ON THE PLAYGROUND- EXAMINING SPACES, DESIGN, AND CAPACITY FOR CHILDREN EXPERIENCING DISABILITY

Abstract ID: 74

Jennifer Leo [1], Dr. Kelly Arbour-Nicitopoulos [2], Carrie Millar [1], Maeghan James [2]

[1]The Steadward Centre for Personal & Physical Achievement, University of Alberta, [2]University of Toronto

Play is a fundamental right of all children. Playground play can provide children with many sensory and motor experiences that are unique to other more organized forms of play. Yet, playgrounds are often spaces where children experiencing disability are excluded. In this mini-symposium, we will share three inter-related initiatives for enhancing the understanding of playgrounds designed for inclusion and quality participation. These initiatives include: (a) a scoping review on inclusive playgrounds design recommendations, (b) a Delphi process for creating a Playground Blueprint on Quality Participation, and (c) development and evaluation of an online youth play leader training.

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### A SCOPING REVIEW OF EVIDENCE-INFORMED RECOMMENDATIONS FOR DESIGNING INCLUSIVE PLAYGROUNDS

Abstract ID: 122

Jennifer Leo[1], Kelly Arbour-Nicitopoulos[2], Denver Brown[2], Timothy Ross[2], Ron Buliung[2], Celina Shirazipour[3], Amy Latimer-Cheung[4]

*[1]The Steadward Centre for Personal & Physical Achievement, University of Alberta, [2]University of Toronto, [3]Cedar- Sinai, University of California Los Angeles, [4]Queen's University*

Aim

This scoping review engaged in the empirical literature to address the research question, “What are the evidence-informed recommendations for designing inclusive playgrounds to enable participation for children with disabilities?”

Methods

We followed the five-stage scoping review protocol identified by Arksey & O’Malley and the Preferred Reporting Items For Systematic Reviews and Meta-Analyses extension for scoping reviews (PRISMA-ScR) checklist: (1) identifying the research questions; (2) identifying relevant studies through a systematic search of databases (Medline, PsycINFO, CINAHL, EMBase, ERIC and Scopus) and hand searching references; (3) study screening in Covidence; (4) data extraction and charting; and (5) synthesizing and collating key findings.

Result

Thirty-five primary studies were included in this review. Study designs included: case study [n = 17]; observational [n = 6]; survey [n = 5]; experimental [n = 4]; and multiple study [n = 3]) designs. Studies originated from North America (14 studies), South America (1 study), Europe (10 studies), Asia (2 studies), and Australia/Oceania (5 studies). Overall, 13 evidence-based recommendations and one promising practice for designing inclusive playgrounds for children with disabilities emerged from our analysis. These recommendations span across five broad playground elements: (1) entry points (wide, flat and firm pathways leading to the playground; wide and obstacle-free playground entrances; enclosed playground space to prevent children from straying); (2) surfacing and paths (flat, uniform playground surface; ramps that provide access to and between elevated play components); (3) features to foster inclusive play (play equipment accessible to all children; variety of play equipment that provides appropriate challenges; different types of sensory-based play components; solitary play components for escaping overstimulation; play components shaped in recognizable designs; informational features to aid with spatial orientation, communication and guidance on equipment use; shaded spaces; (4) staffing/ supervision; and (5) end-user involvement in the design process.

Discussion/Conclusion

Our recommendations focus on moving past the creation of play opportunities for children with disabilities exclusively with physical design elements within the borders of the playground toward a more comprehensive approach that also considers the playgrounds' surrounding built and social environments. Our recommendations have implications for how future playgrounds could be designed to maximize usability and inclusiveness and the overall playground experiences for children with disabilities.

Keywords: inclusive playgrounds, playground design, childhood disability, play, accessible

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## THE INCLUSIVE PLAY YOUTH LEADERSHIP CERTIFICATE: AN EVALUATION

Abstract ID: 123

Jennifer Leo[1], Carrie Millar[1], Maeghan James[2], Ritu Sharma[2], Kelly Arbour-Nicitopoulos[2]

*[1]The Steadward Centre for Personal & Physical Achievement, University of Alberta, [2]University of Toronto*

Aim

The Youth Leadership Certificate in Inclusive Play provides an introduction to practicing inclusive play for young people working in children's recreation via online learning modules. The training focuses on playground play as a platform for fostering inclusive play. This project evaluates the perceived effectiveness and appeal of online learning modules for learning about inclusive play among young people. Target Group Developed for young people who are working or volunteering in children's recreation, the perspectives of those who participate in the Youth Leadership Certificate are the focus of this presentation. We also hope to learn about the experiences of children (both non-disabled and experiencing disability) who come to the playground and participate in programs led by these young people.

Description of Presentation

Lack of trained and knowledgeable staff is often identified as a barrier to participation in physical activity and recreation among members of the disability community. Furthermore, fitness and recreation professionals have identified a desire for more training in regards to providing services related to physical activity promotion for individuals experiencing disability. Playground programs and children's drop-in play opportunities may provide an important place for children experiencing disability to participate in play activities. These programs are commonly led by youth, young persons, and those who may be new to working in children's play and recreation and who likely have less access to training and professional development. To support these young professionals in facilitating quality participation for children

experiencing disabilities, an online series of learning modules about inclusive play has been developed. The overall purpose of this evaluation project is to understand how the information in the modules is going to be used, the perception of the modules among our target demographic (young people), and how the modules may contribute to participants' feelings of competence in inclusive play. In this presentation, we will offer insight into the process of developing the certificate program and share preliminary results on the pilot phase of launching the Youth Leadership Certificate in Inclusive Play.

Conclusion

As a result of the research, we hope to make accessible, effective and meaningful training in inclusive play readily available for young people working in physical activity and recreation.

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## APPLYING THE QUALITY PARTICIPATION FRAMEWORK TO CREATE STRATEGIES TO FOSTER INCLUSIVE PLAY EXPERIENCES ON PLAYGROUNDS

Abstract ID: 124

Jennifer Leo[1], Carrie Millar[1], Maeghan James[2], Ritu Sharma[2], Kelly Arbour-Nicitopoulos[2]

*[1]The Steadward Centre for Personal & Physical Achievement, University of Alberta, [2]University of Toronto,*

Aim

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Conclusion

As a result of the research, we hope to make accessible, effective and meaningful training in inclusive play readily available for young people working in physical activity and recreation.

# ADOLESCENTS WITH FUNCTIONAL DIFFICULTIES IN NATIONAL PHYSICAL ACTIVITY SURVEYS: CASE STUDY OF FINLAND WITH DATA FROM THE SPECIAL EDUCATIONAL SETTINGS

Abstract ID: 68

Kwok Ng [1] , Anni Lindeman [2], Piritta Asunta [3], Niko Leppä [4]

[1]University of Eastern Finland & University of Limerick, [2]University of Jyväskylä, [3]LIKES, [4]Spesia School

Under Article 31 of the convention of rights for persons with disabilities, and Article 12 of the rights of children, children with disabilities should be involved in the data collection where their own views can be expressed. In Adapted Physical Activity, limited evidence is available. It is fundamental to the promotion of physical activity to capture data directly from children and adolescents. Multiply stakeholders use national surveys. In this mini symposium the recent case of Finland to involve adolescents with special educational needs is presented on how to collect data, what results have been found, and what are teachers' perspectives.

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## HOW TO INVOLVE ALL ADOLESCENTS WITH FUNCTIONAL DIFFICULTIES IN THE FINNISH NATIONAL HEALTH AND SPORT SURVEY (F-SPA): QUESTIONNAIRE DEVELOPMENT

Abstract ID: 156

Anni Lindeman[1], Tuija Tammelin[2], Pauli Rintala[1], Kwok Ng[3,4], Piritta Asunta[2]

*[1]Faculty of Sport and Health Sciences, University of Jyväskylä, Finland, [2]LIKES Research Centre for Physical Activity and Health, Finland, [3]School of Educational Sciences and Psychology, University of Eastern Finland; [4]Department of Physical Education and Sport Sciences, University of Limerick.*

Background

Physical activity (PA) and health behaviours among pupils and students in special education classes and schools are largely understudied. According to the United Nations Convention on the Rights of Persons with Disabilities (CRPD), all children and adolescents should have equal access to education and related services. Even though this is recognized, it does not always happen. Since 2014, data from Finnish pupils' PA and health behaviours have been collected every two years within the Finnish School-aged Physical Activity (F-SPA) survey. During 2020, the F-SPA study was carried out for the first time in Finnish high schools and vocational schools. Simultaneously, a separate sample of F-SPA studies in Finnish special vocational schools was conducted. Accordingly, the purpose of this presentation is to report the process of converting the F-SPA survey into a suitable form for Finnish special vocational school students.

Methods and Results

The differences in abilities within special vocational school students can vary a great deal. Hence, the same questionnaire cannot be used with every student. There are three questionnaires: the L-, M-, and S-forms, of which the L-form is the longest with general language, M- and S-forms are shorter with simplified language, and pictures were developed. The questions for the L-form were first chosen from the general F-SPA survey. The chosen questions were translated into simplified language to use them in M- and S-forms. All the questions were also available in a second native language, Swedish. After translating, the pictures for the M- and S-forms were created using a SymWriter symbolizing word processor. The forms were converted to electronic form using a SurveyPal survey platform. The accessibility of the electronic forms was tested with the Finnish Federation of Visually Impaired and one group of special vocational school students with visual impairments. It turned out that screen readers could not recognize question types, single choice, multiple choice, and open field questions, and changes to the SurveyPal coding had to be

done by the moderators to include students with visual impairments in the study. Also to the changes in the survey platform, the pictures were removed from the M- and S-forms to allow screen readers to read the questionnaire properly. Finally, the guidelines for the teachers for choosing the right questionnaire form for each student were created. Data was mainly collected with the electronic questionnaire, but the teachers also had the option to choose paper forms for their students to complete. Some students (5.6%) responded to the survey using paper forms.

Conclusion

As a result of this development work, we have questionnaires designed especially for adolescents with different functional difficulties to enable their participation in the national F-SPA survey.

Keywords: Functional Limitations, Adapted Physical Education, Questionnaire Development

## PHYSICAL ACTIVITY BEHAVIOURS AMONG ADOLESCENTS WITH FUNCTIONAL DIFFICULTIES IN SPECIAL EDUCATIONAL SETTINGS IN FINLAND

Abstract ID: 160

Piritta Asunta[1], Tuija Tammelin[1], Pauli Rintala[2], Anni Lindeman[2], Harto Hakonen[1], Kwok Ng[3,4]

*[1]LIKES Research Centre for Physical Activity and Health, Finland, [2]Faculty of Sport and Health Sciences, University of Jyväskylä, Finland, [3]School of Educational Sciences and Psychology, University of Eastern Finland, Finland, [4]Department of Physical Education and Sport Sciences, University of Limerick.*

Aim

Adolescents with disabilities often face substantial barriers to participating in physical activity (PA) and sports. Moreover, the PA and health behaviours of adolescents with special educational needs are largely understudied. We were interested in the PA behaviours of adolescents who study in special vocational settings in Finland. This study aimed to evaluate how functional difficulties are associated with PA behaviours among adolescents who study in special vocational schools.

Methods

The surveys that use self-reported measures for PA and health behaviours were adapted for students with disabilities and support needs. A nationwide data collection was carried out during the autumn of 2020 (N = 696). The analyses were stratified as per disability groups (difficulties with vision, communication, mobility, self-care, cognition, social interaction, and emotional processing) as recommended by the Washington Group on Disability statistics. A single item was used for daily PA (moderate-to-vigorous PA at least 60 minutes/day), screen time, and sport participation. The data was grouped with the associated functional difficulties, and the associations between the number of functional difficulties were evaluated. The associations between the different groups and the PA variables were analyzed using a chi-square test ($p < 0.05$) and binary logistic regression.

Results

The participants were 16–20 years old. Of these, 20% of the adolescents were physically active in their daily lives. The younger participants (16–17 y, n = 368, 62% boys) were more physically active than the older ones (18–20 y, n = 328, 57% boys), 23% vs. 17% ($p = 0.036$). Only 16% participated in organized sports, and 37% reported a screen time of less than two hours per day. There were no differences found in association to age or sex. When looking at the functional difficulty levels and controlling for sex, age, and family financial background, adolescents who had communication difficulties were more physically active (OR = 2.33, 95%, CI = 1.08–5.01) than adolescents with other functional difficulties. Those who reported having

severe difficulties with self-care (OR = 0.11, CI = 0.01–0.82), cognitive difficulties (OR = 0.49, CI = 0.31–0.83), social difficulties (OR = 0.52, CI = 0.34–0.80), and emotional difficulties (OR = 0.41, CI = 0.27–0.61) – or more overlapping difficulties (OR = 0.66, CI = 0.55–0.80) – were less likely to have a reasonable (< 2h/day) screen time.

Conclusion This study provides an overview of the PA behaviours of adolescents studying in special vocational settings. More innovative strategies, special support, and adapted and inclusive activities are all needed to improve their PA levels, especially in sports clubs.

Keywords: Data, School-age, Washington Group, Functional Limitations, Adapted Physical Education

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## FEASIBILITY OF THE ADAPTED QUESTIONNAIRES – TEACHERS´ PERCEPTIONS AND STUDENTS´ EXPERIENCES

Abstract ID: 159

Niko Leppä[1], Erwin Borremans[2], Piritta Asunta[3], Anni Lindeman[4], Tuija Tammelin[3]

*[1]SPESIA Vocational Collage, [2]LIVE Vocational Collage, [3]Likes Research Center of Physical Activity and Health, [4]University of Jyväskylä*

Aim

In 2020, the Finnish School-Aged Physical Activity (F-SPA) study was carried out for first time in Finnish special educational vocational colleges. The aim was to examine the feasibility of the three adapted survey questionnaires of different lengths and difficulty levels (L, M, S) designed for students with special educational needs.

Methods

First, each of the surveys was cognitively piloted (n = 10), and the students were interviewed after they had completed the survey. The purpose of the piloting was to investigate how much help the students would need, the time required for completing the survey, and whether the questions were understandable. We could not use focus groups as planned. In the national survey, students (n = 1258) were asked whether they would be able to answer the questionnaire independently and, if not, what kind of help would they require. The teachers were asked to complete an online feedback survey regarding the feasibility of the process.

Results

After the piloting was completed, the most difficult questions were broken down into smaller sections, and certain descriptions were added. The longest version (L) was shortened, and an “I don’t know” option was added for some questions in the shortest version (S). Through the national survey, it was found that, out of all the students (n = 1258), 36% reported that they would need some help. The main areas in which they required assistance were reading (48%), understanding words or phrases (52%), and recording responses (16%). The teachers (n = 46) provided their feedback after the national data collection had been completed. Their feedback was extremely positive, such as “This was written in the most easy-to-read language I have ever used with the students even though it was this extensive and comprehensive.” In total, 74% of the teachers reported that choosing the appropriate survey for each of the students in their group was easy. In contrast, 50% of those who thought choosing the right survey form was not as easy stated that even the S version seemed too challenging for certain students. The average response time for the survey was 23 minutes (L = 27 min, SD 16; M = 25 min, SD 14; S = 15 min, SD 11.5). Half of the teachers felt that the survey was just the right length, 33% stated that their students would have been able to respond to a longer survey as well, and 13% responded that the survey was too long.

Conclusion

Special educators were found to respond positively with regard to the desirability and feasibility of making instructional adaptations for students with disabilities. Despite the different versions of the survey forms, the easiest survey (with pictorial text and plain language) was still too difficult to complete for some of the students. This raises the question of whether it is possible to alter the survey even further to customize it as per the specific and individual needs of each student. Implications for practice and for future research will be discussed.

Keywords: Feasibility, School-age, Functional Limitations, self-reported survey, Adapted Physical Education

# INCLUSION IN PYSICAL EDUCATION FROM THE PERSPECTIVE OF CHILDREN AND YOUNG PEOPLE

Abstract ID: 65

Lars Kristén [1], Lena Hammar [2], Kajsa Jerlinder [3], Kim Wickman [4]

*[1]Halmstad University, [2]The Swedish National Agency for Education, [3]University of Gävle, [4]Umeå University*

Research shows that children with disabilities have poorer health than children without disabilities. In Sweden children have the right to education and schooling is compulsory. Schools' meets all children in the arena that best affects students with disabilities in participation in physical education. We aim to discuss research and proven experience focusing on student learning and inclusion to find innovative perspectives to promote participation and accessibility in relation to Convention on the Rights of the Child. Various societal actors are interested to develop knowledge and methods for the education of children and teachers in schools from an inclusive perspective.

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# THE IMPORTANCE OF TRUSTING RELATIONSHIPS, STRUCTURE AND SUPPORT AND THE COMBINATION OF SCIENTIFIC RESULTS, SCIENTIFIC BASIS, PROVEN EXPERIENCE TO IMPROVE THE LEARNING ENVIRONMENT IN PE.

Abstract ID: 133

Lena Hammar[1]

*[1]The National Agency for Special Needs Education and Schools, Sweden*

Background

The presentation is based on a systematic review carried out by the Swedish Institute for Educational Research and the National Agency for Special Needs Education and Schools in which we participated as external researchers. The overall aim was to answer the research question: How can teaching physical education be designed so that students who experience difficulties with social interaction are provided with good conditions for participation, development, and learning? In this presentation, however, we turn our attention to two of the aspects of the review. We also stress the importance of the combination of scientific results and scientific basis and proven experience to improve the learning environment in physical education, for example by National Agency for Special Needs Education and Schools. (LH) Thirdly: It becomes obvious that a combination of scientific results and scientific basis and proven experience are essential to improve the learning environment in physical education. In Sweden, The National Agency for Special Needs Education and Schools (SPSM in Swedish), works to ensure that children, young people and adults – regardless of functional ability – have adequate conditions to fulfil their educational goals. This is done through: special needs support, education in special needs schools, accessible teaching materials and government funding. The Agency is also a link between scientific knowledge and school practice and the systematic review is one such example. The purpose of this part is to show how The Swedish National Agency for Special Needs Education and Schools in Sweden strives to be a bridge that combines research and proven experience to support schools that work towards an accessible, equal and inclusive education for all students. By highlighting the voices of children and students, we will also show the importance of starting from the Convention on the Rights of the Child and the Convention on the Rights of Persons with Disabilities.

Keywords: Accessibility, children, inclusion, participation, physical education

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## THE IMPORTANCE OF TRUSTING RELATIONSHIPS, STRUCTURE AND SUPPORT AND THE COMBINATION OF SCIENTIFIC RESULTS, SCIENTIFIC BASIS, PROVEN EXPERIENCE TO IMPROVE THE LEARNING ENVIRONMENT IN PE.

Abstract ID: 132

Kajsa Jerlinder[1]

*[1]Gävle University, Sweden*

Background

The presentation is based on a systematic review carried out by the Swedish Institute for Educational Research and the National Agency for Special Needs Education and Schools in which we participated as external researchers. The overall aim was to answer the research question: How can teaching physical education be designed so that students who experience difficulties with social interaction are provided with good conditions for participation, development, and learning? In this presentation, however, we turn our attention to two of the aspects of the review. We also stress the importance of the combination of scientific results and scientific basis and proven experience to improve the learning environment in physical education, for example by National Agency for Special Needs Education and Schools. (KJ) Secondly: Another of the theme in the systematic review highlight the importance of providing structure in the form of good and clear planning, explanations, and varied opportunities for students to perform a task.

Results and Conclusion

In the review it became clear that students who experienced difficulties in social interactions in the PE setting requested increased predictability of the lesson to provide a feeling of control. We want to highlight questions of structure and support in physical education to ensure a learning environment for all students where this demands can be fulfilled. By doing so the importance of the joint organizational responsibility are drawn specific attention.

Keywords: Accessibility, children, inclusion, participation, physical education

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## THE IMPORTANCE OF TRUSTING RELATIONSHIPS, STRUCTURE AND SUPPORT AND THE COMBINATION OF SCIENTIFIC RESULTS, SCIENTIFIC BASIS, PROVEN EXPERIENCE TO IMPROVE THE LEARNING ENVIRONMENT IN PE.

Abstract ID: 130

Kim Wickman[1]

*1Pedagogiska institutionen, Umeå universitet, Sweden*

Background

The presentation is based on a systematic review carried out by the Swedish Institute for Educational Research and the National Agency for Special Needs Education and Schools in which we participated as external researchers. The overall aim was to answer the research question: How can teaching physical education be designed so that students who experience difficulties with social interaction are provided with good conditions for participation, development, and learning? In this presentation, however, we turn our attention to two of the aspects of the review. We also stress the importance of the combination of scientific results and scientific basis and proven experience to improve the learning environment in physical education, for example by National Agency for Special Needs Education and Schools. (KW) Firstly: One of the theme in the systematic review describes the importance of trusting relationships, both between students and between students and teachers, who contribute to the experience of being part of a social community.

Results and Conclusion

A common feature of the studies is the importance of as a teacher be sensitive to the students' perspective. In this context, being sensitive means acquiring an idea of the students' different experiences in connection with the teaching of the subject sports and health. On so way, teachers can meet the different needs of students. We intend to draw attention to how the individual's sense of belonging can be strengthened. We emphasize the importance of seeing students 'differences as an asset in teaching, in order to provide good conditions for students' participation in social interaction.

Keyword: Accessibility, children, inclusion, participation, physical education

# PARTNERSHIPS AS CATALYSTS FOR INCLUSION IN THE CONTEXT OF MAJOR SPORTS EVENTS

Abstract ID: 43

Bettina Lehmann [1]

[1]Special Olympics World Games Berlin 2023 Local Organizing Committee

Simultaneous to the Special Olympics World Games Berlin 2023 we want to highlight installed co-operations between organizing committee and National SO Program including people with ID, partners in politics, sciences, and business. The main goal is to host the most inclusive Games – on all levels and in all steps. The partnership philosophy is a best practice example for future organizers and their respective partners to ensure the participatory and inclusive path for everyone on all action levels.

Chair of Mini Symposium: Prof. Dr. Gudrun Doll-Tepper.

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# Inclusion ’23 – A legacy programme of the Berlin Senate complementing the Special Olympics World Games Berlin 2023

Abstract ID: 119

Katrin Koenen[1], Christoph Weber[1],

[1]*Senate Department of the Interior and Sport, Berlin Senate, Germany*

Aim

By implementing a sustainable programme for inclusion, “Inclusion `23”, the Senate of Berlin is taking up the opportunity of the Special Olympics World Games Berlin 2023 (SOWG) to further implement the UN Convention on the Rights of Persons with Disabilities in Berlin and thus make the city in numerous different areas, such as public transport, sport, culture, health, and education, much more inclusive.

Target group

The target group of this presentation includes stakeholders in the fields of sport, education, work, politics, science, and health care as well as scientists as we will demonstrate how host cities of major sports events can maximise the expected legacy, especially in our case the social legacy, by including several different stakeholders.

Brief description of the Presentation

The presentation delivers insights into the focus of “Inclusion `23” and its close coherence with the Local Organising Committee and other partners. Different approaches on how to use major sports events to reach social sustainability and inclusion are demonstrated; the potential of close cooperation within innovative partnerships will be illustrated and most critical aspects of such close collaboration, of common strategic alignments and an early participation of the most relevant stakeholders is accentuated. During the presentation, the project’s set up, the competitive bidding process for potential funding and the consideration process of the selection of projects within "Inclusion '23" is illustrated. Thus, the presentation and following discussions will highlight learnings, beneficial outcomes and also challenges of the programme so far.

Possible Conclusion

The SOWG Berlin 2023 will set an example how major sport events can be used to foster sustainable social change and advance inclusion when unified partnerships are acting in concert in the context of major sport events.

Keywords: Inclusion, unified, Special Olympics, major sport event, legacy, partnerships, people with ID

## INCLUSIVE PHYSICAL ACTIVITY FOR ALL – A EUROPEAN UNIVERSITY COURSE FORMAT BASED ON COLLABORATIVE LEARNING SETTINGS

Abstract ID: 167

Daniela Schwarz[1], Elke Langbein[1]

[1]*Technical University of Munich, Germany*

Aim

To promote healthier living, social inclusion and wellbeing in our society lifelong, inclusive learning spaces and early educational interventions are needed. Trainee teachers, sports, health science students, people with ID were introduced to co-learning, co-designing, and challenge orientated problem solving in collaborative learning arrangements. This format aims to facilitate participants to develop and pitch solutions to the problem of including students with intellectual disability (ID) within physical and health education in general.

Methods

Multi-disciplinary students across Europe were engaged in an innovative solution focused programme of expert academic and industry content to generate pioneering solutions to complex problems. Over 90 participants from European Universities and associated places, stakeholders came to connect, to build partnerships, co-create on projects and worked together to build and develop the innovative solution for better physical activity and health related programs. The program methods benefits from EIT KIC (https://eit.europa.eu/de/in-your-language) services in respect of circulating information among network partners and in particular while supporting low income participants. The innovative summer school 2019 and 2020 allows to scale out to new countries and settings. In 2020 three events took place: two digital learning arrangements, a summer and a winter school as well one face-to-face capsule.

Results

Student learning outcomes included detailed understanding of the challenges to inclusion in different areas like historical, social, cultural and how these impact on health and education experience of people with ID. As well the participation in idea generation and applied skills to critically appraise and select best ideas for development to inform the design of targeted approach to inclusive PE. Foundational understanding in entrepreneurial thinking and approaches to idea generation and problem solving as same as improved communication skills through discussion and presentations. Additionally an understanding of core concepts of universal design for learning, practiced co - learning and co-teaching and critically reflect on the work undertaken of other groups and projects. All participants with and without ID (40) gain PE and health specific knowledge about preparation of PE and Health orientated lessons for inclusive teaching settings.

Discussion/Conclusions

Based on the results generated in InPhysEd 2020 by students and people with ID, innovative solutions were generated to face challenges like major sports events. The SO world games in Kazan 2022 and in Berlin 2023 will be enriched through educational learnings out of this university accredited inclusive course format.

Keywords: Inclusion, unified, Special Olympics, major sport event, legacy, partnerships, people with ID

# HOSTING SPECIAL OLYMPICS WORLD GAMES BERLIN 2023 IN A TRULY INCLUSIVE MATTER LEAVING A LASTING LEGACY

Abstract ID: 118

Bettina Lehmann[1], Sven Albrecht[1]

[1]*Local Organizing Committee Special Olympics World Games Berlin 2023*

Aim

The Local Organizing Committee (LOC) sets the aim to host the most inclusive Games ever. The Special Olympics World Games (SOWG) shall bring us closer to an inclusive society, encouraged by the power of sport, driven by the inclusion of athletes and people with ID and empowered by strong partnerships. The staging of the SOWG will facilitate equal access to sports, education, work, and health care for people with ID as legacy of the Games.

Target group

People with ID will be meaningfully involved in the hosting of the SOWG Berlin 2023. Thus, people without ID will have an immediate and permanent change of attitude towards people with ID and their self-determined participation in society. This positively influences partners of interest and stakeholders in the fields of sports, education, work, politics, science, and health care as well as the general public.

Description of the Presentation

The LOC will host the most inclusive Games ever, showcased by the approach to enable people with ID as shapers of the Games. The participation formats are visible - beside the field of sport - on all levels of the planning and implementation process. People with ID are involved as hosts, volunteers, full-time employees, advocates, members of working groups, inclusion consultants, referee assistants, and beyond. Especially in the expanded Host Town Program of the Games a positive and inclusive impact on the grassroots of 170 communities nation-wide shall be established. The partnerships will spark inspiration in individual organizations, such as sports federations, health professional bodies, government entities, companies, scientific communities and NPOs/NGOs to create inclusive organizational environments where people without ID learn from and empower people with ID through Unified Sports and the Unified Leadership approach.

Conclusion

The highlighted processes and approaches of multiple participatory paths thanks to strong partnerships represented in the Mini Symposium show how an inclusive major sports event can be hosted successfully. The LOC and their partners will increase awareness, facilitate encounters, and foster appreciation. Special Olympics shows the world as it should be and creates an inclusive society by making the invisible visible: The Special Olympics athletes. People with ID will have the opportunity to show their uniqueness, abilities and talents.

Keywords: Inclusion, unified, Special Olympics, major sport event, legacy, partnerships, people with ID

## COLLECTIVE AGENDAS TO ASSIST IN BUILDING INCLUSIVE PHYSICAL EDUCATION

Abstract ID: 50

Michelle Grenier [1], Lauren Lieberman [2], Mey van Munster[3], Martin Gliese [4], Stefan Meier [4]

[1]University of New Hampshire, [2]SUNY Brockport, [3]Federal University of São Carlos – UFSCar, [4]Humboldt-Universität zu Berlin

Globally, the United Nations policies including the Convention on the Rights of Persons with Disabilities (CRPD) specifically refers to physical activity as a right for all children to be provided with opportunities to experience full and effective participation in society. Despite these efforts, inclusion as an educational practice remains situated between socially constructed values associated with being disabled and questionable selective inclusion. Faculty from the United States, Brazil and Germany will present data that reflects the current status of students with disabilities in physical education. This will be followed by a robust discussion on contemporary norms reflective of educational traditions.

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## ADVANCING CONTEXT TO SUPPORT INCLUSIVE PRACTICE

Abstract ID: 150

Michelle Grenier[1], Lauren Lieberman[2]

[1]University of New Hampshire, USA, [2]SUNY-Brockport, USA

Despite the fact that the right to educate all children is protected by national and international treaties, the discourse of inclusive education is unclear, particularly within the context of physical education (Haegele 2019; Petrie, Devcich, and Fitzgerald, 2018). Primary issues include a lack of definitional clarity regarding the term (Göransson and Nilholm 2014) and inconsistencies on the instructional delivery and learning outcomes for students with severe disabilities (Warnock and Norwich 2010). We will argue that, at the forefront of these practices, are the teachers' direct actions that foster equitable practices that can be accomplished by improving teaching and learning for all children. In our search to understand what teachers do within inclusion settings, we subscribe to Waitoller and Kozleski's (2013) definition of inclusive education: Inclusive education is a continuous struggle toward (a) the redistribution of quality opportunities to learn and participate in educational programs, (b) the recognition and value of differences as reflected in content, pedagogy, and assessment tools, and (c) the opportunities for marginalized groups to represent themselves in decision-making processes that advance and define claims of exclusion and the respective solutions that affect their children's educational futures. (p. 543, emphases is the original). As a result of our continued focus on both context and teacher practices, we advance the Lieberman-Brian Inclusion Rating Scale as a tool that can advance inclusive practices by addressing context and supported practices including universal design for learning, thoughtful lesson planning, the use of natural supports. In this presentation, we are interested in challenging the oftentimes ableism notions in exploring teachers' planning and practices within an inclusive setting that address pedagogy, context, and support mechanisms within the classroom (Block and Obrusnikova 2007; An and Meaney 2015; Qi and Ha 2012; Tant and Watelain 2016). Because context seems to affect all aspects of student learning, we must not only examine what teachers do in their classrooms, but how they plan for teaching, particularly given the scant knowledge base on inclusive education for students with disabilities (Tant and Watelain 2016). For this reason, we advocate on behalf of the LIRSPE.

Keywords: Inclusive Physical Education, ableism, natural supports

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## THE CURRENT STATUS OF INCLUSION OF STUDENTS WITH DISABILITIES IN BRAZILIAN PHYSICAL EDUCATION

Abstract ID: 134

Mey van Munster[1]

*[1]UFSCar, Brazil*

Brazil is a country of continental dimensions and huge social differences. Political instability and unequal income distribution directly impact access to education and other human rights, influencing the social and educational inclusion of all citizens, especially those with a disability. Under an international perspective, the purpose of this essay is to discuss the current status of inclusion of students with disabilities (SWD) in Brazilian physical education (PE). Although there are several legal provisions ensuring the inclusion of SWD in general schools, the Brazilian educational system is insufficient to guarantee quality education for all. Among the main obstacles to the inclusion of SWD in PE classes, the following aspects can be highlighted: 1. Absence of a national student information base that allows the construction of an individualized educational plan; 2. Non-existence of Brazilian Standards in Adapted Physical Activity (APA); 3. Unpreparedness of the physical education teacher (PET) due to the insufficient training process; 4. Less time planning classes due to the excessive workload of PET; 5. Excessive number of students per class / teacher; 6. Solitary intervention by the PET, given the lack of an interdisciplinary team and the absence of a support network (caregivers and teachers from the specialized educational service do not offer direct support in PE classes); 7. Inadequacy of equipment and physical space, and shortage of adapted materials. On the other hand, it can be highlighted as positive aspects: 1. The performance of the Brazilian Association of Adapted Motor Activity - SOBAMA, which for 25 years has brought together researchers and published a scientific journal, favouring the dissemination of knowledge in the field of APA; 2. Increase in the number and quality of research involving the interface between PE and inclusion of SWD (Individualized Education Plan and PE; Collaborative work in PE; Curricular Adaptations, Universal Design for Learning and other pedagogical trends); 3. Recently, it is mandatory to insert courses related to APA in the curricular matrices of professional PE training courses; 4. Despite the low incomes, it is possible to see a high level of motivation and personal efforts of some PET, in order to make their classes more inclusive. Although it is not a rule, there are studies reporting successful cases in the inclusion of SWD at various levels of education in Brazil. Considering the aspects exposed above, it appears that there is still a long way to satisfactory include this audience in the context of PE. However, the exchange of professional and academic experiences with international colleagues and researchers seems to be a fundamental point for the development and strengthening of studies and actions in this field.

Keywords: Adapted Physical Education. Inclusion. Students with Disabilities

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## GERMAN VALIDATION OF THE LIEBERMAN-BRIAN INCLUSION RATING SCALE

Abstract ID: 149

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*[1]Humboldt-Universität zu Berlin, Germany, [2]University of Vienna, Austria*

Aim

Inclusion of students with disabilities within the general school system has a history of about 40 years. Inclusion policy is based on the fundamental right of equitable education suited to the learners' needs. It enables the learners' personal and social empowerment, while profiting from diverse backgrounds and abilities. As this international benchmark has been implemented different around the world, students with disabilities often have not found the best possible support within GPE. The LIRSPE (Lieberman et al., 2017) is one of the first measures in place to easily provide feedback to the teachers, to what extent their courses

offer (good) evidence-based practices. As such, the main research questions are i) is it possible to translate the LIRSPE into a German-speaking context, ii) is the translation into the German-speaking context meaningful.

Methods

In international research, translation is extremely important, especially if the questions are supposed to have an identical meaning to all participants in particular in the context of different cross-cultural backgrounds. Therefore, all items were translated by two English speaking General Physical Education (GPE) professionals, following the suggestions made by Banville et al. (2000) for trans-cultural validation, including back translation by professional English language services. Validity has been investigated via online expert panel rating (4/5 APA-/APE-researchers). Both the LIRSPE scale as well as the LIRSPE rubrics were rated (5-point Likert scale) by experts to ensure a meaningful translation. In addition, the relevance of the LIRSPE scale was rated in light of inclusive education within this specific German-speaking context (Giese, 2021). In addition, experts could individually comment on every single item and rubric.

Resulst

Ratings on both the LIRSPE scale and rubrics reported by experts ranged above the average. The translation ranged between 3.60-5.00 for the scale and between 3.80-5.00 for the rubrics. The relevance of the scale was scored 3.00-5.00. In addition, some items and rubrics were commented by all experts, i.e. such items including or referring to special ‘APA-terms’ like ‘within the task’ (TGMD), when items highlight classroom management not directly linked to PE/content specific goals or when items stress on motor learning/development.

Discussion/Conclusion

The study is a first step in providing an international recognized and feasible measure for PE teachers. It also demonstrates cross-cultural challenges. In order to investigate the validity of LIRSPE in the German-speaking countries, the next step will be to conduct a pilot study at an inclusive school to obtain first indications for construct validity in an international comparison.

Keywords: inclusive education, LIRSPE, physical education, translational research

# INCLUSION IN SPORT: WHAT DOES IT MEAN IN PRACTICE?

Abstract ID: 61

Vera Dekkers [1], Afke Kerkstra [1]

[1]Inholland University of Applied Sciences

We will address the topic of the meaning of inclusion in sport in practice. Currently, regarding inclusion in sport different terminology is being used in different countries, which makes it difficult to compare findings and to set unilineal goals and targets. In order to tackle the issues that are currently preventing people with disabilities from participating in sports, there is need to reach a consensus on what inclusive sport truly means.

Chair:
Peter Downs (Play by the Rules/Inclusion Club, AUS)

Presenters:
Afke Kerkstra/Vera Dekkers (SEDY2 project, NL),
Caroline van Lindert (Mulier Insititute, NL),
Sabine Radtke (Paderborn University, GER)

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## THE MEANING OF INCLUSION ACCORDING TO CHILDREN WITH A DISABILITY, PARENTS AND SPORT PROFESSIONALS: A FOCUSGROUP STUDY OF THE SPORT EMPOWERS DISABLED YOUTH 2 PROJECT

Abstract ID: 146

Vera Dekkers[1], Afke Kerkstra[1], Aija Saari[2], Vaida Pokvytytė[3], Pimenta Nuno[4]

[1]Inholland University of Applied Sciences, [2]Finnish Paralympic Committee, [3]Lithuanian Sports university, [4]Sport science school of Rio Maior

Aim

The Erasmus+ Sport Empowers Disabled Youth 2 (SEDY 2) project addresses the topic of encouraging inclusion and equal opportunities in sport. Currently, different terminology about inclusion is being used in different countries, making it difficult to compare findings and to set unilineal goals and targets. In order to tackle the issues that are currently preventing youth with disabilities from participating in sports, the primary purpose of this study is to reach a consensus statement on what inclusive sport truly means. Literature shows that inclusion is a question about individual choice of a sporting activity across a continuum of segregated, integrated and inclusive approaches (Kiuppis, 2018) considered as The inclusion spectrum (Stevenson & Black, 2011). Most of the existing research is not based on the authentic wishes and feelings of children and young people with a disability themselves. Therefore, the main research question is '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 interviews were conducted with children and young people with a disability, their parents and sport professionals in Finland, Lithuania, Portugal and The Netherlands. Data is coded and analysed with Maxqda through the method of thematic content analysis.

Results

All four countries conducted a focus group with each stakeholder group: children with a disability themselves, their parents and sport professionals. In total 12 focus group interviews were conducted.

Preliminary results show that inclusion is about individual needs and wishes and is associated with terms as feeling welcome, taking part, having a choice and equal opportunity. "…it is equal opportunities for all to participate and that, that you are part of like a group and, and that feeling of being part of a group and that you feel welcome." Focus groups with professionals found that for them inclusion is not the same as inclusion policy. "I think we are talking about the same thing, and we feel the same way, but if we compare that to the inclusion policy or the sports covenant, maybe we are not always talking about the same thing." All focus groups will be analysed and the results will be presented during the session.

Discussion/Conclusion

Results have been discussed within the SEDY project group with sport organisations, Paralympic Committees and Universities of Applied Sciences to reach internal consensus. In order to tackle the issues that are currently preventing people with disabilities from participating in sports, there is need to reach a broad consensus statement on what inclusive sport truly means. Therefore the next is to discuss the results externally, to reach broad consensus. This can be taken as starting point for actual steps of improvement to include more children with disabilities in sport.

Keywords: SEDY, sport, empowerment, inclusion

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## THE MEANING OF INCLUSION ACCORDING TO THE STAKEHOLDERS' PERCEPTIONS IN PARALYMPIC SPORT: THE PERCEPTION OF ATHLETES, COACHES AND OFFICIALS

Abstract ID: 148

Sabine Radtke[1], Pia Freier[1]

[1]*University of Paderborn, Germany*

Aim

A new era has dawned with the ratification of the UN CRPD, which expresses in Article 30 that athletes with disabilities have the choice of practising their sport in inclusive and/or disability-specific settings. This demand concerns all levels of sport, amateur and recreational sport as well as competitive sport. In this short presentation, we will explore the question of what the key stakeholders in Paralympic sport in Germany understand by inclusion and what an ideal inclusive setting means from their point of view. In terms of empowerment, the focus will be on the perspectives of Para-athletes. In addition, the perspectives of coaches and officials from Para-sports as well as those responsible for Olympic sports will mentioned briefly.

Methods

In 2019/20, 92 expert interviews were carried out with Para-athletes (N = 35), coaches (N = 34) and officials (N = 23). When selecting the sample of athletes, different squad ranges, age ranges, types of disabilities and sports (individual vs. team sports) were taken into account. After coding the data using MAXQDA software, the evaluation was carried out according to the principles of qualitative content analysis by Mayring (2008).

Results

The athlete interviews make it clear that an ideal inclusive setting is defined differently and depends on the individual circumstances of the athletes. It plays a role whether the athletes are at the beginning of their competitive sport career or have already reached the highest squad level. At the beginning of their career, the type of disability plays a key role in determining the optimal inclusive setting for them. The further their career progresses, the more important the idea of performance becomes for them and thus the desire for

an appropriate inclusive environment that challenges them athletically. It is striking that the athletes clearly differentiate between the training and competition environment with regard to inclusion.

Discussion/Conclusion

The findings of the research project provide important suggestions and impulses for sports. Based on the results, it is possible to identify success and failure factors in relation to the promotion of young and elite athletes. In terms of the inclusive idea, it is particularly important for the interviewees that they have access to the same infrastructure as athletes from Olympic sport and do not experience any disadvantages. All athletes agree that the basic prerequisite for functioning inclusion in sport is that they are seen and treated as athletes (strength orientation) and not reduced to their disability (deficit orientation). On the part of Olympic sport, fear of contact can still be observed in some cases, which can lead to Para-sport not being granted equal participation in terms of the inclusive use of resources.

Keywords: Paralympic sport, elite sport, empowerment, inclusion

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## THE MEANING OF INCLUSION IN SPORT ACCORDING TO VARIOUS STAKEHOLDER GROUPS

Abstract ID: 147

Caroline Van Lindert[1], Maxine de Jonge[1]

[1]*Mulier Institute*

Aim

The Dutch government aims to promote inclusive sport and physical activity. However, the meaning of the word 'inclusion' remains vague. It's possible that one group's definition of inclusive sports and physical activity (PA) may differ from another group's. In order to work towards a common goal (inclusive sport/PA), it is important to address these differences in ideology. The aim of this research was to uncover how various stakeholder groups, such as policy makers, sports clubs, sports federations, community sport coaches and people with a disability, define inclusive sports and physical activity.

Methods

This research was part of a larger study on sport policy and participation among people with a disability, funded by the Ministry of Health, Welfare and Sports, using a mixed methods approach. We present data from interviews with stakeholders representing national organisations for sport and PA and surveys among the following stakeholder groups: community sport coaches (CSC, n=104), municipalities (n=179), regional coordinators (n=35), sports federations (n=42) and sport clubs (n=453). Data from the interviews and open-ended questions were analysed with Maxqda. Descriptive statistics were performed on the survey data using SPSS.

Results

The various stakeholder groups' interpretations of 'inclusion in sport' are presented. Results show that some stakeholders prefer for people with a disability to participate in mainstream sports/PA. At the same time stakeholders prioritise autonomy. For example, the majority of sport federations (53%) and sport clubs (64%) (strongly) agree that people with a disability should partake in sport/PA at the same provider as people without a disability. Municipalities (34%) and CSC (34%) are less confident in this and a minority of regional coordinators (11%) agree with this statement. The majority of regional coordinators (60%), CSC (60%), municipalities (62%) and sports federations (78%) (strongly) agree that inclusion only occurs if people with and without disabilities interact with each other in a sport/PA environment. The majority of the stakeholders (79% of the CSC, 80% of the municipalities, 94% of the regional coordinators and 75% of

the sports federations) (completely) agree that an inclusive sport/PA environment is achieved when everyone's needs and wishes are met.

Discussion/Conclusion

The results show that there is not yet a consensus among stakeholders regarding the definition of inclusion. Some stakeholders believe that the aim is for people with and without disability to practice sport and PA together as much as possible. Others think that the choice should remain with the individual. These differences in interpretation should be kept in mind when creating future policy as they may lead to differing (and potentially conflicting) implementation strategies.

Keywords: sport policy, inclusion, physical activity

# DISABILITY SPORT POLICIES AND PARTICIPATION IN EUROPE: A CROSS-NATIONAL COMPARISON

Abstract ID: 63

Caroline Van Lindert [1], Jeroen Scheerder [2], Ian Brittain [3]

*[1]Mulier Instituut, [2]KU Leuven, [3]Coventry University*

This mini-symposium, based upon the upcoming Palgrave Handbook of Disability Sport in Europe (van Lindert, Scheerder & Brittain (Eds.), 2021), will highlight and compare some of the different ways sport for people with a disability is delivered throughout Europe with regard to their policies, infrastructure and participation levels. As well as an introduction to the handbook we will include short presentations by three of the country chapter authors and will conclude with a discussion of the implications for inclusive sport policies and future research in this area across Europe and beyond.

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## DISABIITY SPORT IN NORWAY

Abstract ID: 115

Marit Sørensen[1], Nina Kahrs[1]

*[1]Norwegian School of Sport Sciences*

Aim

Since 2007 Norway has had an inclusive model for disability sport (now termed para sport) in their main sport organisation, The Norwegian Olympic and Paralympic Committee and Confederation of Sports (NIF). The aim of this presentation is to describe the development of this organisational model and how it works today, report the most important legislation and policies relevant to disability sport, and what the main agents in relation to disability sport are.

Methods

Parts of the data comes from public sources of documents and statistics. Further sources are formal evaluations and research reports. In addition, in order to update the knowledge, during the autumn of 2020, we carried out interviews with a panel consisting of 4 employees in NIF with a long experience of the integration process, as well as 6 former- and presently active athletes with extensive organisational experience in the NIF.

Results

The inclusive organisational model means that all sport federations and regional sport organisations have the responsibility to offer their activities to individuals with disabilities on equal terms with others, and that there no longer are specific organisations for disability sport, apart from The Paralympic Committee, a committee for Deaf sport and one for Special Olympics. There is also a small, administrative unit for disability sport centrally in the Confederation of Sports. The inclusive organisational model is generally seen as successful, but there are also some things that have been lost.

Discussion/Conclusion

Inclusion is not ensured with an organisational model alone – it needs constant work with the social aspects and competence development, financially and practically! Sport activities suitably adapted to the individuals are necessary. Recruitment demands constant attention and initiatives. One challenge is to ensure democratic representation in the organisation for athletes with a disability, in concert with gender, ethnic minorities etc. More overarching strategies for the collaboration between the sport organisations

and the central and regional public authorities are needed, and strategic information must be used in order to convince potential participants in para sport. Especially dedicated people and active and profiled athletes are still an important force in the work.

Keywords: disability sport policy, inclusive organisational model, integration process

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DISABIITY SPORT IN SPAIN

Abstract ID: 116

Javier Pérez-Tejero[1], Cati Lecumberri Gómez[2]

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Aim

Sport practices of people with disability (PwD) in Spain possess a high recognition at general level (mainly through Paralympian influence) and an important legislative support. However, participation rates in physical activity and sport by this population seems still far away from mainstream levels. The aim of this presentation is to present the actual structure and main agents of disability sport in Spain, highlighting main policies and legislation, providing some sport participation indicators.

Methods

An in depth desk research was performed from available data, mainly from disability statistics (EDAD, 2008), the last yearbook of sport statistics (MCS, 2020) and the actual "White book of sport for people with disabilities in Spain" (Leardy et al., 2018). Data from these resources where crossed in order to infer some indicators, such us the percentage of PwD participating in sport actively. Also, the opinion about the integration processes (Reina, 2018) is presented.

Results

Five national disability sport federations are active in Spain, while 15 mainstream sport federations already embrace the modality for PwD, mainly in the recent years. In the sport field, 8.4% of the general population had a sport licence (federated sport; MSC, 2020) while this percentage is just 0.31% for PwD (belonging a quarter to women). Dealing with leisure, exercise and physical activity are the preferred activities of PwD, when asked what they would do in their spare time if they could (23%; EDAD, 2008). The perception of the integration process of PwD in the mainstream sport structures is perceived as positive (in more than 75% of the cases, Reina, 2018) with strong implications for sport promotion and coach education.

Discussion/Conclusion

In Spain there is a clear determination to use sport as a tool for social integration of PwD. Such determination can be seen not only on initiatives and social strategies and education, but also in legislation and policies. However, the real access to practice is not adequate still, so specific strategies to reverse this situation should be established. No data were found regarding sport habits of PwD in Spain from official statistics, so future studies must include this dimension. Inclusion in sport in the recent years comes from philosophy to reality in Spain, as a way to promote the sport opportunities for PwD, and to promote adapted sports to the main public: this is influencing how sport is provided and organized and also how sport policy is evolving.

Keywords: Disability sport policy, sport participation, integration process

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# DISABILITY SPORT IN LITHUANIA

Abstract ID: 117

Jurate Pozeriene[1], Diana Reklaitiene[1]

[1]*Lithuanian Sports University*

Aim

After the re-establishment of Lithuania's independence in 1991, fundamental changes started in Lithuanian sports, including the sports for the disabled. A long and difficult process has begun – reorganising the legal framework of sports, reorganising the medical, social, educational and vocational rehabilitation systems, and establishing disability sports clubs. The primary purpose of this study is to provide an overview of the disability sport system and sport participation by people with disabilities in Lithuania.

Methods

Lithuania Laws addressing the governmental, intermediate, non-governmental and secondary agents were analysed in order to study the organisation of disability sport in Lithuania at the national, regional and local level. Sport participation and barriers for participation were assessed with data from the national disability sports organisations, disability sports clubs and schools.

Results

Lithuanian laws regulating disability sports define guidelines for physical activity, but there is no developed national strategy for the development of disability sports. There is a need for an analysis of the current situation of sports for the disabled in Lithuania. Strategic goals also need to be defined and guidelines need to be outlined for further development of the sport for disabled. In 2018, the Lithuanians Sports Federation for the Disabled organised 32 competitions at the national level with a total of 678 participants. 90 disability sports organisations participated in the state program Integration of the Disabled People through Physical Education and Sport. According to the project report, 3,328 people with a disability (2,897 adults and 431 children) participated in continuous sport activities and 3,240 people with a disability ( 2,958 adults and 282 children) participated in one-time sport activities or events.  Discussion/Conclusions There is lack of data regarding the sport participation of people with disabilities. We still need to answer the following questions – whether or not conditions are created for people with disabilities to participate in mainstream sports activities, whether they are physically active enough. The participation data is accessible only from Paralympics, Special Olympics, Sports for the blind and Deaf Sports Committees. The ongoing disability sport integration processes in Lithuania are not monitored systematically. There are only separate initiatives to monitor and investigate the process. We need to increase the research and systematic monitoring to evaluate the disability sport integration processes and give recommendations regarding the improvement of disability sport, motivation and barriers for participation.

Keywords: Disability sport policy, sport participation, integration process

# Innovated Sessions

## Tuesday 15th June 2021

# INSTITUTE ON MOVEMENT STUDIES FOR INDIVIDUALS WITH VISUAL IMPAIRMENTS OR DEAFBLINDNESS: RESEARCH AND PRACTICE

Abstract ID: 45

Lauren Lieberman [1], Melanie Perreault [1], Pamela Haibach-Beach [1], Ali Brian [2], Lindsay Ball [1]

[1]State University of New York at Brockport, [2]University of South Carolina

Aim

The Institute on Movement Studies for Individuals with Visual Impairment or Deafblindness (IMSVI) housed at SUNY Brockport has been busy conducting research, providing programming, providing leadership for our undergraduate students and conducting workshops and professional development locally, nationally and internationally. IMSVI encompasses a consortium of researchers who value the improvement of physical activity and motor skills for individuals with sensory impairments throughout the lifetime. Research by this team encompasses both descriptive and intervention research. Target group Children, youth, and adults who are visually impaired, blind or deafblind have been known to be the most difficult to teach in physical education. They also have shown to have lower levels of physical activity and decreased motor skill competence. Therefore, our research projects focus on descriptive and interventions that improve physical activity and motor skills for this unique population. Our programming focuses on children and youth with visual impairments and additional disabilities. Our educational programs target teachers, paraeducators, parents and specialists. Lastly, our leadership development spans from undergraduate students to doctoral students world-wide.

Description of the presentation

Our recent research focuses on motor skills, home environment, feasibility of a motor skills intervention, and parental perceptions of children with CHARGE syndrome. Our research on individuals with visual impairment focuses on bullying in youth with visual impairments, outdoor recreation, balance intervention with older adults, self-determination in physical education related to Dignity of Risk, and experiences of elite rowers who are blind! Our programming covers the US as well as countries around the globe with Camp Abilities. Our educational training materials encompass videos, books, validated instruments, power points, curricula, and tip sheets.

Conclusion

As a result of our work, we have provided programming that educates the participants as well as their teacher and care givers. We have disseminated research in peer reviewed journals word-wide, and national and international conference on descriptive and intervention studies. We have started The Society on Physical Activity for Individuals with Visual Impairment or Deafblindness. We have provided leadership experiences for students world-wide in the form of running programs, writing grants, conducting research, presenting at conferences and publishing articles.

Keywords: visual impairment, blind, deafblind, sport, physical activity, motor development, physical education

# GOOD PRACTICES TO ACTIVATE THE INACTIVE ELDERLY AT THEIR HOMES AND OUTDOORS

Abstract ID: 112

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[1]Age Institute, Helsinki, Finland

Aim

Older persons benefit from regular exercise and are encouraged to go outdoors in daily basis to maintain functional capacity. However, opportunities for outdoor physical activity are often limited due to decreased mobility, memory problems, loneliness or fear of falling. Further, barriers to exercise include lack of transportation and personal assistance. Majority of older persons experience unmet needs for physical activity. Thus, innovative approaches to overcome personal and societal barriers are needed. We present two innovative solutions to overcome the challenges on physical inactivity among elderly: Go Out to Forest with the Elderly campaign and Remote Exercise Service. The aims of the GOFE are to 1) promote outdoor activities in safe company, 2) encourage volunteers, nursing professionals, students and families to go out with elderly, and 3) inspire municipalities to take advantage of the natural sites nearby and to improve their accessibility. The aims of the RES are to 1) develop and test a practical model to promote functional capacity at home, 2) train professionals and volunteers to instruct online training or to act as a digi-mentor, and 3) offer video material for old people to train by themselves at home.

Target group

The target groups are 1) people aged 75+ years who live independently at home, are physically inactive with early signs of functional decline, as well as elderly In service houses, 2) professionals and volunteers in municipalities and third sector.

Description of the presentation

Everyone can participate in GOFE by walking outdoors with the elderly, recording the outdoor sessions in a website and challenging others to join the campaign. The Campaign takes place in September every year. In 2019, municipalities were encouraged to organize trips at natural sites, further away from the center. Trips were planned and implemented in the municipalities in cooperation with local actors and supported by a grant from a private company. The forest trips were organized in 41 municipalities with 1600 older people who have functional limitations, 800 other older persons, 361 volunteers, 78 local decision-makers and 239 organising members. The RES pilots were carried out in 3-month interventions, which included a broadcast once a week and self-training with videos 2-3 times a week. Data were collected from elderly, volunteers, and the team. Instructors learned skills on using devices as part of their instructions routines, were able to check the safety issues with the older persons. Results from objectively measured functioning showed mostly improvements in the participating older persons. All target groups learned new digital skills. Elderly reported that ability to live at home independently was the greatest motivator for learning.

Conclusion

We showed in the GOFE campaign and RES that both outdoor and indoor activities offer a feasible approach to physical activity in older persons.

Keywords: elderly people, functional capacity, outdoor activities, Remote Exercise, volunteers

# MOVING TOWARDS INCLUSIVE COMMUNITY PARTNERSHIPS

Abstract ID: 178

Lily Jagodzinski [1]

[1]Move United, USA

Move United incites action through Inclusive Community Programming to help lead us to a world where everyone's included. Along with our member network of 180+ Adapted Sport Organizations, we build quality partnerships with schools, recreational, and competitive sport programs across the United States to bridge the gap between individuals with and without disabilities. During this discussion, attendees will learn how to educate children on how to play and compete together, communicate with parents, educators, administrators, and coaches, design and modify activities for all abilities, and leave with a suite of educational materials to help you include all athletes in your programs! Move United's Inclusive Playbook is an educational tool created to educate youth, Kindergarten - 6th grade, on disability awareness and adaptive sport. We are working with National Governing Bodies, community programs, and adapted sport organizations (known as Inclusive Playbook Champions) to spread the message about inclusion and encourage their local educators to use the tool. In order to work towards a world where every person, regardless of ability, has an equal opportunity to participate in sports and recreation in their community, we must use the power of sports to push what's possible for people with disabilities. Additionally, we have collaboratively created a variety of sport-specific resources to help educators and program providers modify their activities to include athletes with disabilities. For example, we've created an Adaptive Sailing Resource manual with US Sailing, Adaptive Snowsports Instruction with PSIA/AASI, and a Wheelchair Tennis Coaching Manual with the US Tennis Association! Through hearing Move United's experience in working and building relationships with adapted sports organizations within the Move United Membership Network, attendees will understand how to access, use, and leverage the Move United Resources and Tools (Inclusive Playbook, Inclusive Sport Fundamentals, Athletics for All Posters and Manuals, etc.) to increase inclusion for athletes with disabilities.

Keywords: Adapted Sports, Inclusive, Training, Education, Disability, Inclusive Playbook, Adaptive Sports Training Resource Library

# ADAPTED RECREATIONAL SCUBA DIVING: A LEISURE AND ADVENTURE OPTION

Abstract ID: 97

Lucia Sodré [1]

[1]Handicapped Scuba Association - HSA (Course Director)

Adapted recreational scuba diving is a leisure and adventure option also for people with disability. Diving is to be able to feel, the magnitude of life, in the soul, to be aware that disability is not necessarily an impediment for someone to be deprived of experiencing the adventures and beauty of life, in their daily existence, and with their diving buddies, in the oceans across planet Earth. The practice of adapted diving, in this study, is related to the field of social imagery, leisure, ecotourism, adventure and risk. This research comprises the following question: what are the meanings of leisure, adventure, risk, disability and people with disability, present in the social imaginary of scuba divers with physical, visual and audiovisual disabilities?

The objectives of this research are: (i) to identify the meanings of leisure, adventure and risk that emerge from the discourses of scuba divers with physical, visual and audiovisual disabilities; (ii) unveiling the beliefs about disability and people with disability that emerge from the social imaginary of these divers. The recreational adapted scuba diving for the people with disability presents itself as one of the social practices that can collaborate with the reconsideration of beliefs about disability and about the people with disability, as well as for the redefinition of the social imaginary about this subject in our society. Researching and building knowledge in the area of adapted recreational scuba diving is a way of bringing the activity to the academic universe, in order to polish it and develop it with the help of science. Due to its qualitative and interpretive nature, this research adopts oral history and hermeneutics as methodological strategies. Therefore, interviews were conducted, which were filmed, in order to capture, in addition to the words, all possible details of recording and observation through this audiovisual resource.

With the results, in essence, it is evident that the divers interviewed consider diving to be a leisure option that provides satisfaction, self-realization, diverse emotions, experience of cooperation, companionship and mutual responsibility between diving buddies; and that every adventure involves risk, however, with adequate technical and safety conditions, accidents are avoided and safety is increased when facing possible adversities. They dive to explore, get to know, feel and be moved in the fascinating underwater world. The sea presented itself as a source of peace, inspiration and emotions that are difficult to describe. It is clear that disability is, for them, a limitation, and not an impediment to the practice of diving or to well-being, as long as the appropriate conditions for their performance are understood and facilitated.

Keywords: scuba diving; people with disability

# Wednesday 16th June 2021

# MEANINGFUL SPORT - THE INCLUSION THROUGH SPORT OF THEORY TO PRACTICE

Abstract ID: 32

Ana Barradas [1]

[1]APCAS-Almada Seixal Cerebral Palsy Association

The Almada Seixal Cerebral Palsy Association is a particular social solidarity institution whose goal is support families of persons with cerebral palsy or other neurological situation. The APCAS has a strong presence in the sports field, always taking citizenship into account as a universal right and therefore the projects and activities it develops are benefited by all, with activities with strong impact on the community, from training, awareness, interventions in the context, provision of materials, among other activities. In this communication we intend to demonstrate projects that complement each other. They present a longitudinal view of people with disabilities accompanying them throughout their lives and a transversal view promoting sport in the most diverse sports contexts. These projects complement each other in the transition from theory to practice of the premise of sport with all by educating for sport in an inclusive and cross-cutting perspective.

Thus, in the sports field, APCAS develops several projects at national and international level: Desporto Com Sentido, co-financed by the National Institute for Rehabilitation, Portuguese Institute of Sport and Youth, Seixal and Almada City Council and in partnership with the General Directorate of Education and Human Kinetics Faculty, where 21 manuals about inclusive sport were published; Todos Por Um, co-financed by INR, which aims to promote socio-educational inclusion, with the spread of inclusive sport, in students of 2nd and 3rd cycle of basic and secondary education; Escola da Vida Ativa, co-financed by IPDJ that aims to promote the practice of physical activity and inclusion in pre-school children and in the senior population; Resource Center for Adapted Sports, co-financed by INR where specific sports material is available for the development of activities with population with disabilities; Integrated Resource Base for Sport, co-financed by the Decathlon Foundation, which complements the previous ones, increasing the inclusive sports offer in the region and promoting consultancy and monitoring to the different clubs region to implement this offer.

In addition, we promote the following sports as a regular offer: Boccia, Wheelchair Slalom, Inclusive Dance, Race Running, Polybat and Therapeutic Swimming. In an international perspective, highlight the InSport project: Sport Inclusion - Full Participation in Sport by Persons with Disabilities, co-financed by the European Union's Erasmus + program, which aimed to promote the full participation and social inclusion of people with disabilities in and through physical activity, sport for all and sport throughout life, through the development of a European Model for Inclusion in Sport. APCAS supports more than 150 families and adds activities that involved: 93431 students, 10674 young people with specific needs / disabilities, 9871 teachers / technicians, 4186 seniors and 15136 volunteers / family members.

Keywords: Adapted Physical Activity, Disability, Inclusion, Sport

# TE KAIWHAKATERE – TRAIL RIDER

Abstract ID: 242

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[1]Tauranga City Council, New Zealand

Aim

To taking accessibility and unique experiences to the next level is what this project is all about. Te Kaiwhakatere (Trail Rider) is an all-terrain wheelchair that provides a new opportunity for families, whānau (extended family) and volunteers to come together, accessing new sites, heights and views.

Methods

Project partners included Tauranga City Council(TCC), Ngā Poutiriao o Mauao, Halberg Foundation and Mount Maunganui Beachside Holiday Park. Relationship management ensured:

- the aspirations of all partners were being met, that the project was viewed as an opportunity that addressed community need.
- that project implementation maintained a risk mitigation, harm reduction and barrier removal focus.

Key success factors were developed against the Council Disability Action Plan and included: equity of access, increased social inclusion, reduced isolation and the sharing of experiences.

Criteria was met through various project components and outcomes: 1) Free bookings eliminating cost barriers and increasing autonomy over participation. 2) Provision of accessible, operational, and safe equipment. 3) Sharing experiences and creating memories with whānau, volunteers, peers and the wider community. 4) Encouraging participation in outdoor activities which enables connection with others, community connection with person with disability and people aged over 65 years.

Results

Prior to the implementation of Te Kaiwhakatere, access to walking tracks and the summit of Mauao was not possible for people with a disability and access using a 4WD vehicle was no longer permitted. Te Kaiwhakatere enables our community to have a choice in participation, on their own schedule, with their own support networks and peers. People with a disability are no longer spectators or passive observers. They now have the opportunity and choice to be active participants and create long lasting memories alongside their whānau and peers.

Discussion/Conclusion

The project did not have delivery targets as it is a regional first, enabling community autonomy over their own experiences through the delivery of new equipment and redesign of booking systems. It is expected that use will increase over time as community awareness increases and the safety and reliability of the equipment is proven. It is noted that in addition, people with a disability have often encountered barriers that restrict their inclusion and participation including poor quality experiences reducing confidence and the desire to participate in recreation and leisure activities; it is expected that this internalized barrier will take some time to overcome. Since the launch on December 16th, 2020, the following results have been evident: 991 Facebook ‘likes’, 140 Facebook comments, 109 Facebook shares, 28 Te Kaiwhakatere bookings, 112 whānau, peers and volunteers engaged.

# FROM GLOBAL TO LOCAL: PARALYMPIC EDUCATION IN MALAWI

Abstract ID: 120

Damian Haslett [1], Jennie Wong [1]

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Aim

The aim of this session is to discuss findings from an innovative project that examined how Para sport can be utilized to increase access to assistive technologies (AT) in Sub-Saharan Africa. The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) identifies AT as a human rights obligation because they are mediators towards equal opportunities for disabled people. Moreover, it is evident from some Global North contexts that Para sport is a powerful vehicle towards advancing the aims of the UNCRPD. However, Para sport has yet to reach many low-to middle income counties in the Global South, where stigma and discrimination continue to reinforce social exclusion for disabled people in many ways, in particular around access to, and the adoption of, AT.

Target group

This interdisciplinary four-year project (2020-2024) employed qualitative and action research methodologies in Malawian, Zambian and Ghanaian contexts. Diverse and innovative methods were used to examine nine Para sport activities for the relationship between Para sport, stigma and AT. The activities focused on community engagement, athlete development and media, such as the broadcasting of the Tokyo Paralympic Games in Sub-Saharan Africa.

Description of presentation

Three themes that crosscut the activities will be presented: Para athletes as communicators for social change; contextual development practices in Para sport; and Para sport and social justice in the Global South. The findings will be discussed in relation to critical disability studies, communication for social change, and pathway development policy literature.

Conclusion

We will conclude by highlighting practical implications of this project such as the development of a communication for social change toolkit. We hope this innovation session will help scholars and practitioners think more critically about the role of Para sport in relation to human rights and assistive technologies in Sub-Saharan Africa.

Keywords: Para sport; Social Change; Stigma; Assistive Technologies; Africa

# IMPLEMENTING SUSTAINABLE DEVELOPMENT GOALS FROM ADAPTED PHYSICAL ACTIVITY AT HIGHER-EDUCATION

Abstract ID: 163

Raul Reina [1], Alba Roldan [1]

[1]Miguel Hernández University

Aim

The Sustainable Development Goals (SDGs) address the global challenges we face, including poverty, inequality, climate change, environmental degradation, peace, and justice. The SDGs mix three dimensions (i.e., social, environmental, and economic) and are focused on five domains: i.e., earth, people, prosperity, peace, and alliance for attaining the goals. Altogether, 17 goals are linked with Agenda 2030 for globally sustainable development. Since adapted physical activity (APA) embraces the diversity of a wide group of people with disabilities and other special conditions, this innovative proposal provides some examples of how a university-level curriculum on APA contributes to SGDs.

Target group

Sports have a noticeable contribution to several SGDs. The Miguel Hernández University of Elche (Spain) is implementing the SDGs at several levels, including management, research, and teaching. In this line, the bachelor in sports sciences and physical education includes a set of seminars for all the students for developing aspects like the acquisition of soft skills and social commitment. This proposal highlights some best practice through an APA course (7.5 ECTS) about the SDGs and the UN's 2030 Agenda.

Description of the presentation

A proposal with 11/17 SDGs was prepared for a group of students that voluntarily participated in the seminar. All these SDGs were linked with the APA course curriculum, including: 1–No poverty: development cooperation activities facilitating access to special equipment. 3–Good health: improving sedentary lifestyles in people with disabilities (PwD). 4–Education quality: responding to the specific needs of PwD and implementing an inclusive approach. 5–Gender equality: considering gender for grouping in practical lessons. 8–Good jobs and economic growth: having a network for allowing direct contact and internships with PwD. 9–Innovative and infrastructure: low-cost adaptations for universal access to sport settings and/or facilities. 10–Reduced inequalities: remove negative attitudes towards PwD and empowering their participation in sports and physical activity. 11–Sustainable cities and communities: understanding of the main barriers and facilitators for ensuring full participation of PwD in the community and physical activity/sports settings. 12–Responsible consumption: recycling materials for creating adaptive equipment. 16–Peace and justice: critical discussion about the current organization of sports for PwD and its alignment with the rights of PwD. 17–Partnerships for the goals. Best practice example for empowering PwD throughout sports.

Conclusion

Using the above-mentioned examples for the APA course, a seminar conducted with a group of 22 students created a series of 41 new proposals that would be applied in activities or the curriculum of other courses of the university studies in sports sciences and physical activity.

Keywords: Sustainable development, adapted physical education, para-sport

# "PURE" PLAY VS EXERGAMING: A CONCEPTUAL ANALYSIS AS TO WHY EXERGAMING IS NOT PLAY

Abstract ID: 109

Maria Kosma [1]

[1]Louisiana State University

Aim

In recent years, the fields of kinesiology and public health promotion have put great store in the potential for on-line, digitally-mediated exergaming to promote higher levels of physical activity and so to reduce disconcertingly high levels of obesity in the USA. Drawing on Huizinga's Homo Ludens (1950), the purpose of this paper is to provide a theoretical analysis of the motivational resources provided by "pure" play in contrast to the engineered instrumental design of exergaming. The analysis furthermore serves to explain the disappointing results of studies to date on the effects of exergaming.

Target Group

Exercise promoters are increasingly being advised and/or directed to promote exercise by means of the use of digitized technology in various forms, such as the digital transformation of workouts into games like exergaming (video games in the form of exercise), based presumably on its perceived efficiency in reducing costs and increasing access. This digitized form of play has been advised not only among people without disabilities, but also among people with disabilities, including children and young adults. Therefore, this paper targets both people with and without disabilities.

Description of the presentation

According to Huizinga (1950), pure play stands outside the practical demands of ordinary life; it is not something that people must do to survive. Rather, play is undertaken for its own sake, for the lived experience of joy, tension, creativity, and release. In contrast, by setting measurable objectives for calorie expenditures, exergaming is intentionally (if misguidedly) designed both to motivate people lose weight and to serve the state's interest in reducing morbidity and mortality rates. As a result, instead of tapping into the motivational appeal of having fun, exergaming extends the pressures, stresses and burdens associated with having to meet biological and social needs. Ironically, exergaming is thus more likely to harm rather than improve users' health.

Conclusion

Manipulating the masses to undertake a virtual workout – exergaming – to meet certain national standards is not play; rather, it can turn into drudgery with damaging mental health effects. When movement becomes an unpleasant workout to achieve measurable, objectified outcomes, people fail to enjoy the experience of play for its own sake. They fail to immerse into its magical world and be creative and imaginative. It is time to return to our roots and rejoice "pure" play within our communities as an end in itself, which is part of human existence and consciousness.

Keywords: "pure" play vs. exergaming, play for its own sake, Huizinga's Homo Ludens

# TOWARDS A SUSTAINABLE AND TECHNOLOGICAL APA IN THE LIGHT OF GOOD PRACTICES

Abstract ID: 174

Ayşegül Rosa Aksoy [1]

[1]Sirnak University

Aim

The aim of this study is (a) to compare the well-known European Adapted Physical Activity (APA) teacher training programs, implementations, and projects by certain characteristics, (b) to assess the very programs' integration to new technologies, and at the end, (c) to be able to propose a new, sustainable, inclusive technology integrated APA training program.

Methods

Data is presented from the estimation of four international APA & adapted physical education (APE) programs and/ projects (DAPAW, DSH-GAM, EIPET, EUDAPA) in European (Finland, Ireland) and one non-European country (Turkey), in respect of holistic approach; and as a response to United Nations' Sustainable Developmental Goals (SDG) Goal #3: Good Health and Wellbeing, Goal #4: Quality Education, Goal #10: Reduced Inequalities, and Goal #11: Sustainable cities and communities (2015). The assessment of the programs made by using the programs' /projects' published guidelines, programs, scientific articles, news, and other lectures related materials that could be reached out. To avoid the risk of bias, four expertise in higher education of Physical Education Teacher Education (PETE) and APA training made the quality check. The inspection to given demographic-descriptive statistics of the programs were made under the categories of (a) Content: a1: general objectives, a2: course plan-modules; (b) Practical specifications, b1: duration, b2. Staff & students enrolled b3: Place; (c) inclusiveness and accessibility), c1: stuff with disability, c2: students with disability, c3: accessibility of educational & sports materials; (d) educational and assistive technology, d1: use of technology in the teaching settings (as EdTech context), d2: use of assistive technology.

Results

Although, it is possible to reach a general framework for Adapted Physical Education (APE), in the European Standards in Adapted Physical Activity (EUSAPA, 2010) , likewise, a Physical Education Teacher Education (PETE) curriculum with teaching standards and guiding principles from Society of Health and Physical Educators (SHAPE) America, and Adapted Physical Education National Standards (APENS) by National Consortium for Physical Education for Individuals with Disabilities (NCPEID), America. However, there is a need to provide technological content knowledge (TCK) among special education physical education teachers (K. Ng., et. al., 2021) in the society of information, knowledge and learning, whether ICT used as tools for teaching, learning, work, or management in general (Napal, et. al, 2020).

Discussion & Conclusion

Therefore, merging results from this study and discussion lends itself to greater opportunity to create a new APA course model inspired by those good practices that were studied. However, with the rapid changes in APA research field, along with educational technologies in the light of SDG with the latest COVID-19 pandemic, inevitably, we are dragged into the necessity of designing technology integrated, inclusive APA settings.

Keywords: DSH-GAM, sustainable development goals, educational technology, EUDAPA, COVID-19

# Thursday 17th June 2021

# SPECIAL OLYMPICS ONLINE LEARNING PORTAL: LEVERAGING TECHNOLOGY TO EXTEND THE REACH OF MULTI-DISCIPLINARY EDUCATION PROGRAMS TO A GLOBAL VOLUNTEER COMMUNITY

Abstract ID: 110

Fiona Murray[1], Jamie Valis[1]

[1]Special Olympics

Aim

Special Olympics (SO) provides sports training and competition to more than 5.7 million athletes with intellectual disabilities (ID), across the lifespan. With local activities taking place in over 200 countries and territories across the globe, SO has virtually unparalleled reach and is thus uniquely positioned to address barriers faced by people with ID. In 2017, SO launched a cross-functional project to create a bespoke Online Learning Portal to educate and train key constituents (from SO coaches to family members to healthcare professionals) on best practices for coaching people with ID, reducing health disparities for people with ID, and increasing health/fitness opportunities for people with ID.

Target Group

Since its inception in 1968, SO has become the world's largest sports organization for people with ID, with over half a million coaches. The goal of the Online Learning Portal was to provide an accessible, cost-effective, and systematic delivery platform for SO programs to utilize when training coaches. The project resulted in a platform which could also be utilized to educate and train health and wellness professionals on ID.

Description of the presentation

SO launched the Online Learning Portal in late 2018 with a multi-lingual e-learning module designed to educate coaches about their roles and responsibilities at Special Olympics World Games and a series of courses to support the training of Special Olympics health volunteers. Learning programs used interactive and multimedia features (e.g., knowledge checks, reflective tasks, webinars, and gamified elements) to support learners' engagement. Survey tools were deployed within modules to understand changes in knowledge and additional support needs required by learners. During the COVID-19 pandemic, the Online Learning Portal was leveraged to support and expand training opportunities for key volunteers. Successful initiatives included virtual trainings for Athlete Health Messengers, SO program staff development, and local university partnership activation.

Conclusion

Over the past 4 years, the SO Online Learning Portal has expanded to provide a wide range of learning opportunities in 12 languages for learners across the areas of coaching, healthcare professional education, athlete leadership, and schools, among others. The SO Online Learning Portal has over 43,000 learners registered across 235 SO Programs, representing more than 175 countries and territories. The platform hosts over 50 courses/programs, which utilize best practices in adult education and subject matter expert input. SO is continuing to expand and refine learning opportunities and develop new functionality in the Online Learning Portal to support ongoing global education.

Keywords: Coaching, Health, Sport, Education

# DEVELOPING ADAPTED MEASUREMENTS OF THE PHYSICAL FUNCTIONAL CAPACITY OF CHILDREN AND ADOLESCENTS WITH DISABILITIES

Abstract ID: 154

Anni Lindeman [1], Piritta Asunta [2], Tuija Tammelin [2]

[1]University of Jyväskylä, [2]LIKES Research Centre for Physical Activity and Health

Aim

Move! is a national physical-functional-capacity monitoring and feedback system for Finnish 5th and 8th graders. It consists of eight sections of measurements that provide information about the pupils' state of physical functional capacity. The measurements used by the system have been designed to illustrate those daily tasks undertaken by the students that require physical functional capacity. Move! is a part of the national core curriculum for basic education in Finland and thus belongs to all pupils studying by the national core curriculum. While all children and adolescents should be given equal opportunities to participate and gain knowledge regarding their physical functional capacity, many pupils with special educational needs are not able to perform the measurements used by the system. Thus, LIKES Research Center for Physical Activity and Health had led a TUTKA2 project (2020–2021), aiming to develop adaptations and alternative assessment methods for the Move! system.

Methods

Certain adapted measurements have been created to serve as basic Move! measurements to define those daily tasks performed by children and adolescents with disabilities that require them to use their physical functional capacity. For example, the everyday tasks that require physical functional capacity will be different for a child who uses a wheelchair than for one who can walk. The adaptations and alternative measurements were created using existing physical functional capacity measurement adaptations such as the Brockport Physical Fitness Test, Netfit, and the Special Olympics FUNFitness Training Manual. The pilot phase of the adapted Move! measurements was conducted with 80 children and adolescents, aged 9–28 (mean age 14.7), with special educational needs. The data was collected during the spring and fall of 2020 from two cities in central Finland. The participants' heart rate was monitored to ensure safety during the measurements. They were also asked to rate their perceived exertion using a modified Borg scale (RPE).

Results

The pupils' emotional states were asked before and after the measurements using a smiley scale (1 = very happy, 5 = very sad). In general, their emotions were positive and improved during the assessment (the mean value changed from 1.73 to 1.47). In addition, feedback for each of the measurements was also collected. The pupils liked the five continuous jumps and its adaptations and alternative measurements the most. The least-liked measurement was the squat (mobility) and its adaptations and alternative measurements. Conclusion The Move! measurements, their adaptations, and the alternative measurements were well received by the pupils who had special educational needs. The teachers' manual and video material for the Move! adaptations and alternative measurements will be published to enable equal participation in the Move! systems by all pupils in the autumn of 2021.

Keywords: Physical functional capacity, Adapted measurements, Adapted physical education, Children

# HEART RATE TABLET APPLICATION: IMPROVING PHYSICAL ACTIVITY LEVELS FOR INDIVIDUALS WITH AUTISM SPECTRUM DISORDER

Abstract ID: 7

Melissa Bittner [1]

[1]CSU Long Beach

Aim

Individuals with autism spectrum disorder (ASD) face significant challenges such as motor impairment in their daily lives that considerably restrict their abilities to persistently remain physically active or engage in recreational activities. As a result, many of individuals with ASD may pose a multitude of health risks such as cardiovascular disease and Type 2 diabetes. A potential solution to reduce such risks is promoting physical activity to individuals with ASD given its abundant health and cognitive benefits. As such, this research proposes an innovative tablet application: Heart Rate Tablet Application developed for individuals with ASD to visualize energy expenditure generated during physical activity in real-time. The purpose of this presentation is to disseminate the Heart Rate Tablet Application and discuss its potential to increase peak and average heart rate and time-on-task during physical activity in individuals with ASD.

Target group

A total of 15 individuals with ASD from a Southern California Transition School between the age of 18 and 21 took part in the pilot study. Individuals were asked to exercise on stationary bicycles for a targeted duration at 20 minutes, using two protocols (i.e., control and Heart Rate Tablet Application) in a randomized setting.

Description of the presentation

The Heart Rate Tablet Application uses several evidence-based practices that are specific to individuals with ASD (National Professional Development Center, 2014). The Heart Rate Tablet Application uses a visual concept of climbing up a mountain striped in stop light colors (i.e., red, yellow, green) to encourage individuals to work harder when performing physical activity. Red is 50% or less of heart rate maximum, yellow is 51 to 60%, and the green zone is 70 to 90%. Participants will choose a developmentally appropriate avatar (e.g., superhero, picture of self) for exercising. The user's avatar will move up or down the mountain depending on intensity level during physical activity. For every 30 seconds in the red zone, the user earns a red star (and an auditory stimulating chime). For every 20 seconds in the yellow zone a star and chime is earned, and every 10 seconds in the green zone. Finally, a visual counter shows the amount of time remaining visually rather than numerically, as many individuals with ASD do not understand numeric counting.

Conclusion

Results of this pilot study indicated higher peak and average heart rates in those who used the Heart Rate Tablet Application during physical activity compared to those who did not. However, these differences were not shown to be statistically significant ($p > 0.05$). Given the small sample size, further experiments may be necessary to verify this observation. By implementing findings from this pilot study to improve the design of the application, the Heart Zone Tablet Application may be an innovative method to increase peak and average heart rate in individuals with ASD.

Keywords: tablet application; heart rate; energy expenditure; autism spectrum disorder

# SOCIAL MEDIA IS...: NAVIGATING THE PURPOSE, ETHICS, AND ACCESS OF DIGITAL METHODS FOR THE RESEARCH INVOLVING INDIVIDUALS WITH DISABILITIES

Abstract ID: 90

Andrew Colombo-Dougovito [1], Scott McNamara [2]
[1]University of North Texas, [2]University of Northern Iowa

Aim

The COVID-19 pandemic has proven to be a wide-spread, disruptive force. Increased concerns of virus transmission during in-person meetings have halted many research projects. As daily tasks increasingly shift into the digital environment, researchers have needed to contend with this shifting praxis. Though not a novel means of data generation, more and more scholars are turning to digital spaces, particularly social networking sites (SNSs), to recruit, collect, and disseminate research. As these spaces are relatively "new", little guidance or accepted practice exist concerning the ethics and practice of generating data or recruiting participants within these spaces.

Target group

Over the last decade, SNSs have drastically changed the way that people communicate with one another. Increasingly, SNSs are being leveraged by traditionally marginalized individuals to build community around shared experiences and build advocacy movements. As a research tool, SNSs have provided access to these communities; however, much of this research has operated under the assumption that information shared on these platforms is considered public information and using this data for research purposes does not need ethical review. Such laissez-faire practices, however, increases the potential for exploitation and abuse. This presentation will provide a space to discuss ethical issues regarding social media research and its places among adapted physical activity research.

Description

Despite the myriad health concerns surrounding various disabled communities, present research continues to to struggle to provide accessible solutions as recruitment is often limited to small, convenient (often, privileged) samples. Meaning, scaling solutions and practices are difficult as previous findings may not generalize to a more representative sample of participants. Leveraging digital methods and accessing SNSs may provide opportunity to recruit more diverse sample populations, thus extending the reach of a single study and the likelihood of better generalization or transference. With a central goal of creating a space to discuss the ethical concerns of digital methods and conducting research on SNSs, this presentation will examine prior research using SNSs and present a case-study of a recently conducted study.

Conclusions

In exploring the past use of digital methods and SNSs for research purposes, this presentation will provide a moderated opportunity for scholars to explore how digital methods might be leveraged in post-COVID research and why engaging in these methods will provide more accessible experiences for our intended populations. Lastly, as digital competency is increasingly mandatory, attendees will be exposed to the ethical concerns with digital research methods and have an opportunity to reflect on what these methods mean for the field and the populations this intends to help.

Keywords: research methods, social media, accessible practice

# Friday 18th June 2021

# INJURY AND ILLNESS SURVEILLANCE IN FINNISH ELITE PARA-ATHLETES: A TOOL TO OPTIMIZE PERFORMANCE IN PARALYMPICS?

Abstract ID: 155

Johanna Lehto [1], Johanna Ihalainen [2], Maarit Valtonen [1], Kaisu Mononen [1], Katja Saarinen [3], Ari Heinonen [2]
[1]KIHU, [2]University of Jyväskylä, [3]Finnish Paralympic Committee

Aim

Injury and illness surveillance plays an integral role in the prevention of injury and the protection of athletes' health. Knowledge on sports-related injuries in Paralympic-sport is limited and there are no data on how these injuries and illnesses effect on training and ability to compete. Furthermore, the relationship between injury and/or illness time-loss to training and likelihood to achieve personal performance goals in Paralympic sports remains unknown. The aim of this project is to prospectively record injuries and illnesses of elite para-athletes aiming for Tokyo 2021 Paralympics Games. The ultimate objective of the project is to enhance para-athlete health and performance.

Target group

All Finnish para-athletes aiming for Tokyo 2021 Paralympics (n=46) have been invited to participate for the present study.

Description of the presentation

Number of paralympic-athletes has been increasing year after year. Meanwhile, participation in sports places the athlete at risk for injury and clearly more data on is warranted. The present study examines the relationship between injury and/or illness time-loss the 6-months before major international events and the likelihood to succeed in achieving a set performance goal during those events. Our knowledge of sports-related injuries and illnesses in Paralympic sport is very limited and there are no large-scale epidemiological cohort studies. In this presentation we will introduce a protocol that could be used not only for prospective monitoring of injuries and illnesses of para-athletes but also involve physiotherapist in remote monitoring to react this quickly and efficiently and consequently prevent lost training days. More research concerning injury patterns, risk factors, and prevention strategies of injuries in para-athletes is warranted. This presentation will introduce a prospective cohort study design that aims to report incidence and characteristics of injuries and illnesses in Paralympic athletes during year 2021 before, during and after Paralympic Games. The OSTRC Questionnaire used for assessing injuries and illnesses detects a health-problem already before it affects trainings. Furthermore, the assessment of risk factors has be included in the injury and illness surveillance project to facilitate the development of preventive interventions.

Conclusion

Health problems have a direct impact on athlete performance-, short- and long-term participation, team performance and individual well-being. Prevention and early detection of health problems is essential, and it relies on accurate injury surveillance. As a result of this work, knowledge on Finnish para-athletes, especially on their injuries and illnesses, is expected to increase. With the result we aim to improve the support for the para-athletes.

Keywords: Paralympic-sport, health, injury, illness, para-athlete

# INSPORT PROJECT: SPORT INCLUSION – FULL PARTICIPATION IN SPORT BY PERSONS WITH DISABILITIES

Abstract ID: 33

Ana Barradas [1]

[1]APCAS-Almada Seixal Cerebral Palsy Association

The InSport project: Sport Inclusion - Full Participation in Sport by Persons with Disabilities is co-funded by the European Union under the Erasmus + program and will run from January 2018 to June 2020. This project focuses on promoting the full participation and social inclusion of people with disabilities in and through sports, physical activity and the promotion of healthy living habits; through the development of a European Model for Inclusion. It is coordinated by APCAS-Cerebral Palsy Association of Almada Seixal (Portugal) and has different partners: European Paralympic Committee [EPC] (Austria); TAFISA-The Association for International Sport for All (Germany); UNESCO Chair, Tralee Institute of Technology (Ireland); Portuguese Institute of Sport and Youth (Portugal); and Knowledge Center for Sport Netherlands (The Netherlands).

The outputs of the project are: 1. Guide to the analysis of good practice at national level in the field of inclusion through sport; 2. Guide for the development of the European Model of Inclusion in Sport; 3. Guide of intervention support material (adaptation and / or construction); 4. Course Curriculum - Human Resource and Organizational Capacity Building; 5. Website; 6. Guide of actions promoting the inclusion of people with disabilities in the sports field. All project outputs are available at: https://in-sport.eu/, which contains all the results obtained during the project and which we intend to summarize in this International Symposium of Adapted Physical Activity. This way, it is intended that InSport Project will have a strong impact in promoting the full participation and social inclusion of people with disabilities in and through physical activity, allowing the promotion of strategies that increase opportunities for the participation of people with disabilities in the community.

Keywords: Adapted Physical Activity, Disability, Inclusion, Sport

# APA-STAT: ADAPTED PHYSICAL ACTIVITY FOR SUSTAINABLE TEACHING WITH ASSISTIVE TECHNOLOGY

Abstract ID: 172

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[1]Sirnak University, [2]Middle East Technical University

Aim

The aim of the study is (1) to create online technology integrated Adapted Physical Activity (APA) module, contains 5 sub-sections, (2) to serve this course through its own online platform for APA & Adapted Physical Education (APE) pre-service and in-service teachers to develop their knowledge and skills required to actuate as an APA expert through online platform set inclusively, and (3) to create the APA-STAT application to serve as a mobile application for the use of people with disabilities (age 4-17, and over 65) to participate in physical activity (PA) synchronously.

Target Group

The target group of study (a) as APA module learners are pre-service and in-service APA & APE teachers, (b) children with disabilities aged between 4-17 and older adults aged over 65.

Brief Description

The rapid advancement in 21st century's technology with a paradigm shift in higher education during COVID-19 pandemics, and the significant potential of engaging the people with different abilities into society, education, and importantly physical activity with assistive technology appears more realizable. The researchers developed the APA-STAT module (with 5 sub-sections) from earlier experience about learning and teaching APA, inspired by the previous good practices, interventions, projects, and programs, with an undeniable effect of new technologies. APA-STAT is serving as a mobile application for its users to attend PA synchronously through the mobile application calls APA-STAT. Users attend to physical activity with an APA expert who completed the APA-STAT Module (with 5 sub-sections: (1) Introduction to APA, (2) All Levels of Abilities & Disabilities, (3) Preparing APA Plan, (4) Assistive Technology (AT) and Educational Technologies (EdTech), (5) APA-STAT Application & Features).

Conclusions

APA-STAT aims to function as a mobile application for children with disabilities aged between 4-17, and older adults over 65, to promote PA. However, APA-STAT is an education platform for APA professionals, which is expected to serve as a mobile platform for future use of PA participation with more inclusive and adapted settings for those with all abilities.

Keywords: adapted physical activity, sustainable education, inclusive education, mobile application, COVID-19

# EVALUATING THE ACCESSIBILITY ASSESSMENT METHODS FOR SPORTING FACILITIES: A REVIEW OF THE LITERATURE AND EXISTING APPLICATIONS

Abstract ID: 161

Kati Karinharju [1], Reetta-Kaisa Kuusiluoma [1], Riikka Tupala [1]

[1]Satakunta University of Applied Sciences

Aim

Accessible sporting facilities are a prerequisite for equal engaging and participation in physical activity. 2014 Satakunta University of Applied Sciences (SAMK) conducted a national study to investigate the level of accessibility at main sporting facilities in Finnish municipals (n=182). The results of this study indicated that there was a notable number of shortcomings in accessibility among these sporting facilities evaluated. This reinforced the fact, that even though there has been progressive work among laws, regulations and guidelines concerning the overall accessibility, these accessibility solutions have not been successfully implemented in sporting facilities and more actions to improve accessibility among designing and constructing the sporting facilities are needed. Therefore, the Ministry of Education and Culture in Finland has launched a long-term work to improve the accessibility in sporting facilities. This work has led to improvements in accessibility, especially concerning the facilities that have recently (2015 and after) been built and/or renovated. However, there are approximately 40 000 registered sporting facilities in Finland and systematic and publicly available information of accessibility among these sporting facilities is still missing. There is a need for objective and cost-effective method to collect the accessibility information of the sporting facilities and for register where this information can be publicly obtained. In order to respond to this need, SAMK started 2019 a new research project, where the aim is to investigate the existing publications and applications to assess accessibility in sporting facilities and to provide recommendations to assess and report accessibility in objective and efficient way.

Target group

This project focuses on the national and global accessibility assessment methods, tools and applications, that are assessing and collecting the accessibility information in sporting facilities.

Description of the presentation

This presentation reports the main results of the literature review and summary of the quality assessment conducted to existing accessibility assessment methods found nationally and globally.

Conclusion

As a result of this project, a summarized information of existing national and global accessibility methods, tools and application to assess accessibility in sporting facilities are provided. Moreover, recommendations for collecting and providing the accessibility information concerning the sporting facilities will be presented

Keywords: Accessibility, application, assessment, sporting facility

# Oral Presentations

Tuesday 15th June 2021

## Parallel session 1

# SELF-REPORTED WALKING CAPABILITY AND CHANGES IN OUTDOOR MOBILITY AMONG OLDER PEOPLE DURING COVID-19 SOCIAL DISTANCING

Abstract ID: 86

Heidi Leppä [1], Laura Karavirta [1], Sini Siltanen [2], Erja Portegijs [1], Timo Rantalainen [1], Merja Rantakokko [3], Taina Rantanen [1]

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Aim

During spring 2020, multiple actions were made to prevent the spread of SARS-CoV-2 virus causing COVID-19 all around the world. In Finland, the government announced a state of emergency, and especially persons over 70 years of age were advised to avoid contact with persons outside of the household. We studied whether the changes in different aspects of outdoor mobility during social distancing versus two years before differed according to self-reported walking capability at baseline.

Methods

Community-dwelling participants of AGNES (N=1021; conducted in 2017-2018) initially aged 75, 80 or 85 years took part in the AGNES-COVID-19 postal survey in May and June 2020 (N=809). To assess different aspects of outdoor mobility, we administered Life-Space Mobility Assessment, Impact on Participation and Autonomy Questionnaire, and Yale Physical Activity Survey for Older Adults at baseline and in 2020. Baseline self-reported capability in walking 2 km was categorized as intact walking (reporting neither difficulty nor modifications), walking modifications (no difficulties and ≥1 modification) and walking difficulties (at least some difficulty). We analyzed changes over time using Generalized Estimating Equations.

Results

Overall, life-space mobility and autonomy in outdoor mobility declined (mean score changes -11.4, SD 21.3; and 6.7, SD 5.3, respectively), but physical activity increased (5.5 min/day, SD 25.1) during social distancing. Older people with intact walking reported the highest life-space mobility and level of physical activity, and perceived the highest autonomy in participation outdoors compared to the other walking capability categories at both time points. Over time, their physical activity increased more and life-space mobility decreased less, but their autonomy in participation outdoors decreased more than among those with walking modifications or difficulties. Those with walking difficulties had the poorest outdoor mobility, steeper decline in life-space mobility ($p=0.001$), smaller increase in physical activity ($p<0.001$), and less decline in autonomy of participation outdoors ($p=0.017$) than those with intact walking. Those with walking modifications resembled those with intact walking in terms of life-space mobility and self-reported physical activity over time, but they had steeper decline in life-space mobility and smaller increase in physical activity ($p<0.001$ for both).

Conclusions

Older people with intact walking replaced participation to out-of-home activities with physical activity, while their autonomy in participation outdoors worsened during social distancing. Those with walking difficulties experienced the highest decline in outdoor mobility and were least able to substitute visits to closed community amenities with physical activity, leading to a potentially high-risk stagnant life-situation requiring further study.

Keywords: Aging, mobility, participation, social isolation, SARS-CoV-2

# A COMMUNITY-BASED MOTOR SKILL INTERVENTION FOR CHILDREN WITH ASD AGES 4-6: AN EXPLORATORY PILOT INVESTIGATION

Abstract ID: 92

Meghann Lloyd [1], Aaron Ibbitson [2], Taylor Runge [1], Kyra Cooper [1]

[1]Ontario Tech University, [2]University of Toronto

Background

Fundamental motor skills are the skills required for children to engage in more complex games and activities; they include running, throwing, catching, kicking, etc. Evidence indicates that children with autism spectrum disorder (ASD) experience delays in their fundamental motor skills, but with intervention these delays can be mitigated. However, most published motor skill interventions for children with ASD are laboratory-based, and not run in a community setting.

Aim

The purpose of this study was to pilot an 8-week, group, fundamental motor skill intervention (90 mins/week) for 4-6 year old children with ASD delivered by a community based organization. The objective was to determine the feasibility of this type of delivery model and to examine if motor skills improve.

Methods

A local community-based soccer club was recruited to deliver the intervention. The instructors and volunteers were trained by the researchers on the curriculum as well as basic behaviour management. Each week a different skill was the focus (e.g. throwing, catching, kicking, running, jumping, etc.). All assessments were conducted by the research team, but the delivery of the intervention was led by the community partner exclusively. 9 children with ASD (8 male, 1 female, mean age= 5.7 + 0.56 years) were recruited. Motor skills were measured using the Test of Gross Motor Development-2 (TGMD-2) before and after the intervention. Parents were completed a questionnaire to provide feedback on the program.

Results

At the pre-test assessment, all children with ASD were significantly delayed in their motor skills as measured by the TGMD-2. There were significant improvements as indicated by the Gross Motor Quotient (Time 1 mean = 60.33 + 15.35, Time 2 mean = 74.22 + 23.91; p = .004); as well as for the Locomotor sub-score (Time 1 mean = 10.78 + 10.63, Time 2 mean = 19.22 + 11.88; p = 0.014), and object control sub-score (Time 1 mean = 12.67 + 8.31, Time 2 mean = 22.11 + 14.68; p= .005). While parents were overall very happy with the pilot program, they indicated the most valuable part of the program was meeting the other families and the time to talk, while watching their children participate in the program. They did suggest that the lead instructor should have a coaching and/or pedagogy background to maximize instructional time.

Conclusions

All the children demonstrated significant delays in motor skills at the baseline assessment and made improvements through the intervention. The research team learned a lot from this pilot study; specifically, about the amount of training and support required for community-based groups to deliver a motor skill intervention program for children with ASD. More, evidence-informed, programs for children with ASD are needed and more research is required on the most effective curricula and mode of delivery, particularly in the community setting.

Keywords: ASD, intervention, fundamental motor skills, pilot

# MUNICIPAL SERVICES OF ADAPTED PHYSICAL ACTIVITIES – CASE FINLAND

Abstract ID: 157

Timo Ala-Vähälä [1]

[1]Finnish Society of Sport Sciences

The presentation discusses the system of municipal services of adapted physical activities in Finland. The main questions of the presentation are: (1) how have the municipal services of adapted physical activities developed during last two decades and what has been the impact of the corona virus pandemy to them and (2) how do the assessments given by the providers of the services and the assessments given by the people that use the services correspond to each other. The system of municipal provision of adapted physical activities goes back to 1980's the Act on the Promotion of Sports and Physical Activity required municipalities to provide equal opportunities for physical activities to all of their inhabitants. At the same time state started to give support for hiring exercise instructors that would provide services to people with special needs.

Since 2002 the municipal services have been surveyed or assessed by National Sport Council in four-year intervals. The 6th assessment will be carried out in 2021. Previous evaluations have collected data from municipalities focusing on resources, the amount various types of exercise groups and other services and co-operation between various sectors of administration within the municipalities. In other words: the assessments have looked at the services from the point of view of the service providers – the opinions of the clients have not been asked. The assessment of 2021 tries to cover this shortcoming by carrying out an internet-survey targeted to people that participate to adapted physical activities and by series of interviews. The survey was carried out by the Finnish Paralympic Committee, but the project that assesses the municipal services, contributed to the analysis of the results and can utilize the results. The interviews will be carried out in co-operation with instructors that provide exercise groups in municipalities.

Due to the corona virus pandemic the year 2020, the assessment will collect data from two years 2019 and 2020 in order to get reliable comparisons to previous years: the year 2019 will represent the last "normal" year and year 2020 will be discussed as a crisis that forced the municipalities either to shut down services or develop new types of activities, like online exercise groups. The assessment will discuss the strategies that the municipalities have chosen to cope with the crisis and their expectations about the process of recovery or returning to more normal time.

Keywords: Municipal services of adapted physical activities

# ADAPTED PHYSICAL ACTIVITIES PROPOSE TO THE STUDENT WITH AUTISM TO SUPPORT PEDAGOGICAL AND SOCIAL ACTIVITIES DURING THE QUARANTINE OF COVID-19

Abstract ID: 102

Gabriela Gallucci Toloi [1], Matheus Borges Iwazaki [1], Vinicius Natan Calixto de Souza [1]
[1]Unifai, Brazil

Aim

The study addresses a topic reference to Autistic Spectrum Disorder (ASD), and pedagogical support through adapted physical activities. As study objective was developing adapted motor activities to student with ASD seeking accomplish the educational needs to be applied during COVID-19 and identify the evolution of such skills parallel with pedagogical and social learning experiences.

Method

This is a case report and used qualitative methods to analysis a particular phenomenon of one single person, in an integrated perspective. The collect data was supposed to be in a school environment during the physical education classes. However, COVID-19 quarantine situation, especially regarding lockdown, created the establishment to collect the data in the student house. All physical activities were previously elaborated to achieve their objectivities in relation to pedagogical and social matter according to the school weekly plan. Also due to the COVID-19 pandemic, in the matter to avoid social contact, the child's parents participated as mediators in this process. The parents collaborated with application, observation of those activities, and described the results of the study weekly, based on three areas: behavior, cognitive, and social-affective. There were planned five orientation sessions, of which, five activities were explained and demonstrated to the parents' prior the application to the student in a virtual setting meetings (platform google meet). The parents had to apply those physical activities 2 or 3 times a week and after reported the observational results. The activities planned weekly were: 1. jumping numbers, 2. follow the trail out, 3. syllabic balls, 4. running vowel, 5. random syllabic game. The materials usedwere similar from the school and could be easily found in the house.

Results

A satisfactory evolution of the student was identified at the end of the proposal. Advances were mentioned and described by the parents identified qualitatively differences and improvement on the behavioral, especially on concentration, cognitive and socio-affective areas. The adapted physical activities provided a better pedagogical approaches, which consolidated the child's learning during the application of those motor activities.

Discussion/Conclusions

The practice of adapted physical activities providing motor stimulation, together with a potentially pleasant environment, with a focus on playful practices, allowed the maturation of behavior, cognitive and social-affective areas. On the whole, there was evidence to see the importance of adapted motor activities, as a form of intervention and also works as a tool on the construction of better educational activities, helping the development of this student with ASD, specially during this specific and delicate moment with COVID-19 quarantine period.

Keywords: Autistic Spectrum Disorder, Adapted motor activities, Pedagogical and Social Support, COVID-19

# THE DYNAMIC INTERPLAY BETWEEN PHYSICAL ACTIVITY, AFFECTS AND SYMPTOMS AMONG PSYCHIATRIC PATIENTS

Abstract ID: 165

Marit Sørensen [1], Marte Bentzen [1], Anders Farholm [2], Andreas Ivarsson [3]

[1]Norwegian School of Sport Sciences, [2]Østfold University College, Faculty of Teacher Education, [3]Halmstad University

Aim

Physical activity (PA) is recommended to counteract some of the common causes of the increased early mortality in the population with severe mental illness (SMI)., There is also growing evidence for mental health benefits of PA for various diagnose groups. PA is documented to be low among individuals with SMI. Problems with motivation are reported. According to Affective-Reflective Theory (ART), the emotional experience with PA is of importance for the future engagement in PA. Therefore, we wanted to study the relationship between PA, affect and illness symptoms among patients under treatment for SMI.

Methods

The study had a longitudinal cohort design, following 10 in-patients with SMI and addiction over 12 weeks at a psychiatric ward offering PA as part of treatment. An accelerometer was used to objectively measure participants' PA-level each week. Data was collected 14 times with a questionnaire measuring positive and negative affects and illness symptoms. To analyse the week to week relationships between the PA-level, affects and illness symptoms, the Bayesian dynamic p-technique analysis was used to explore both cross-sectional-, autoregressive- as well as cross-lagged effects between the constructs.

Results

There were, in all models, credible positive autoregressive effects for both PA, positive and negative affective responses, as well as mental illness symptoms. There was a credible positive cross-sectional correlation between PA and positive affective responses as well as a negative credible cross-sectional correlation between PA and negative affective responses. Also, there was a credible negative cross-sectional correlation between PA and mental illness symptoms. None of the cross-lagged effects, between any of the variables, were credible.

Discussion/Conclusions

The activity level varied among the patients and indicated a distribution from sedentary to highly active. Even if some patients remained sedentary, it shows that when offered the opportunities for PA, many psychiatric patients may become fairly active, supporting other findings in the literature. Data supported credible relationships between physical activity and positive affects, meaning more PA was related to more positive affects, and more physical activity was related to less negative affects. Likewise, more PA was related to less illness symptoms. These results support the ART theory and previous research findings. We did not find that PA would predict future affects or illness symptoms. One explanation may be that patients often have complex and severe mental illness and problematic addiction. Their situations fluctuate all the time, due to the illness and struggles met in treatment. Therefore, the temporal associations between PA and affects and illness symptoms from one week to the next over a 12-week period may not be linear. Another possibility may be that the autoregressive effects were so strong that they overrode the cross-lagged effects.

Keywords: Exercise, affect and psychiatric symptoms

# PORTUGUESE AND BRAZILIAN PARENTS' PERSPECTIVES ON PHYSICAL ACTIVITY PROGRAMS DESIGNED TO CHILDREN WITH AUTISM SPECTRUM DISORDER

Abstract ID: 104

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[1]University of Beira Interior, [2]University of Anhanguera – Osasco

Recently, there has been an increased interest, by researchers and parents, on possible therapies that benefit children with Autism Spectrum Disorder (ASD), whether on a social, communicative, cognitive and / motor level. Various types of physical activity (PA) programs are presented in the literature, which have been implemented in children and juvenile with ASD and which report benefits in different domains, making them very valuable for them. Although the literature is clear and shows the benefits of PA among this population, are parents of children with ASD clear about the potentialities that PA presents in improving their children's quality of live? Parents' perception of the benefits of PA can influence children's behaviour towards PA and their motor development.

With this study we intend to understand parents' perspectives on PA programs designed to children with ASD and evaluate possible cultural differences between Portugal and Brazil. Twenty parents of families with a child with ASD participated in this study (n = 10 - Portuguese parents; n = 10 - Brazilian parents) through the application of a questionnaire specifically designed to evaluate the parents' perspectives about the importance of AF. 60% of Portuguese and 90% of Brazilian parents claim to know the benefits that PA brings to their children, however, a large percentage, 70% (Portuguese) and 50% (Brazilian) say they need more information about this topic. We also found that 80% of Portuguese parents and 40% of Brazilian parents express an interest in acquiring more knowledge about PA in PEA. Regarding the main objectives associated with their children's PA, 60% of Brazilian parents consider improving social interaction, 70% say they contribute to muscle strengthening and disease prevention and 30% consider fun as one of the main objectives. In contrast, 90% of Portuguese parents consider that PA contributes to improvements in motor skills, 70% consider improving social interaction, 60% refer to improving communication and 50% of parents believe it to be a relaxing activity.

Regarding the barriers towards PA, Portuguese parents reported weak motor skills, learning problems, inadequacy of existing PA activities, price and inclusion problems (acceptance by other children), whereas Brazilian parents highlighted health issues related to ASD, PA is over-stimulating, adult advisors do not make my child feel welcome, lack of transportation and the places where the programs are unsafe. To promote PA among children with ASD, parental involvement is crucial. Parents must recognize not only the effective benefits of PA programs for children with ASD, but also have adequate information about their specific child's appropriate program.

Keywords: Parents' perspectives; ASD; Physical activity

# THE EFFECTS OF A MULTI-COMPONENT TECHNOLOGY-BASED INTERVENTION ON INDEPENDENT PERFORMANCE OF THREE RESISTANCE-TRAINING EXERCISE TASKS BY ADULTS WITH AUTISM SPECTRUM DISORDERS

Abstract ID: 173

Iva Obrusnikova [1], Albert Cavalier [1], Cora Firkin [1], Ashley Steinbrecher [1]

[1]University of Delaware

Aim

Individuals with autism spectrum disorders (ASD) engage in significantly lower levels of physical activity and physical fitness compared to the general population. Identifying exercise strategies that promote the adoption of physically active lifestyles in adults with ASD is critical in the promotion of their health. One aspect of this lifestyle is a regular fitness regimen in a home or community fitness centre. The aim of the study was to examine the effects of a multi-component technology-based intervention, consisting of a visual activity schedule and a video-enhanced system of most-to-least prompting (MLP), both displayed via an iPad, on the acquisition of resistance-training exercise tasks by adults with ASD.

Methods

This study utilized a multiple-baseline-across-participants single-subject design with a convenience sample of three men (aged P1=28, P2=42, P3=37 years) with ASD and a comorbid intellectual disability (IQ: P1=55, P2=40, P=41). The Receptive One-Word Picture Vocabulary Test (ROWPVT) age-equivalent scores were below eight years (P1=5-8, P2=7-5, P3=4-8). P2 and P3 were non-verbal. The target resistance-training tasks were chest press, leg press, and seated row. The dependent measure was the percentage of steps completed correctly and independently. Two 35-min sessions per week were conducted in a laboratory setting, each consisting of a warm-up, stretching, and performance of the three exercise tasks. Procedural fidelity checks were performed for all sessions. Two sets of data also were collected to determine the social importance, acceptability, and contextual relevance of the treatment and the procedures.

Results

There were immediate changes in level after the introduction of the intervention for all participants and exercise tasks. Mean percentage gains in the total number of steps performed correctly and independently in the treatment phase were large for all exercise tasks and participants (Chest Press: P1=49.63, P2=46.25, P3=44.80; Leg Press: P1=52.11, P2=47.72, P3=58.85; Seated Row: P1=63.84, P2=47.08, P3=52.97). The improved performance was maintained one week after the last treatment session and extended to a large YMCA gym. Using the percentage of non-overlapping data, the treatment was considered very effective for all participants. Social validity data confirmed the social importance of the treatment.

Conclusion

The use of the technology-based intervention, consisting of a visual activity schedule and a video-enhanced system of MLP, can lead to improved acquisition and maintenance of resistance-training exercise tasks by adults with ASD and a comorbid intellectual disability. The enhanced ability of adults with ASD to manage their exercise behaviour without the need for supplementary supports by other persons can overcome some of the constraints to physically active lifestyles, which can further benefit them in the recreational and vocational aspects of their lives.

Keywords: Autism spectrum disorders; exercise performance; prompting; video-based instruction; resistance training

# Parallel sessions 2

# DO PARENTAL BELIEFS AND SUPPORT PREDICT THE MOTOR COMPETENCE OF YOUTH WITH VISUAL IMPAIRMENTS?

Abstract ID: 100

Alexandra Stribing [1], Ali S. Brian [1], Emily N. Gilbert [2], Lauren J. Lieberman [3]

[1]University of South Carolina, [2]SUNY Cortland, [3]The College at Brockport

Aim

Parents tend to play a vital role in their child's movement development for youth with disabilities by supporting and encouraging their children to be active. However, little research to this point has explored the extent to which parents' beliefs and support of their children's motor skills may predict their child's motor competence. The purpose of this study was to explore if parental beliefs and support predicts their children's level of motor competence.

Methods

Parents of youth with visual impairments (VI; N = 91; mothers = 76.6%, fathers = 20.2%; Mage= 42.84 years, SD=8.09 years) completed the modified parents' perception questionnaire. Youth with VI ages 9-19 years (N=94; Mage=153.32 months, SD=27.72 months, girls = 41.5%, boys = 58.5%) completed Test of Gross Motor Development third edition (TGMD-3). Youth participants visual classifications included B1 (n = 25), B2 (n = 16), B3 (n = 38), and B4 (n = 14) as defined by the United States Association for Blind Athletes.

Results

A backward linear regression was utilized to determine if parents' beliefs and support of their children's motor skills predicted their children's motor competence after controlling for age, sex, and degree of vision. Age, degree of vision, when the parent believed their child could change their motor skills, when parents believed that people in general could change their motor skills, when parents disagreed that people in general cannot change their motor skills, and when parents provided transportation for their child to engage in activities that involved motor skills significantly predicted actual motor competence ($F [6, 85] = 14.548$, $p < .001$, adjR2 = .47). These beliefs and support items accounted for 47.2% of the explained variance in actual motor competence.

Discussion/Conclusions

Parents' beliefs and support in their children's motor skills were significant predictors of their child's motor skill competence. More specifically, when parents of youth with VI believed that their children could change their motor skills and provided transportation to practice motor skills their children's actual motor competence may improve. Results could help teach parents the importance they have on their children when it comes to believing in their children's ability and supporting them through their motor development. Findings can influence future intervention strategies targeting parent-child relationships and motor skill development.

Keywords: Blindness, Motor Skills, Children, Parents

# PREDICTORS OF QUALITY OF PARTICIPATION IN ADAPTIVE SNOWSPORTS FOR INDIVIDUALS WITH DISABILITIES OF ALL AGES

Abstract ID: 76

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Aim

Research suggests that the quality of participation in adapted physical activity rather than the quantity have a greater impact on health and well-being. The Quality of Participation in the Parasport Framework (QPPF) was developed based on literature to assess quality of participation. It is comprised of 6 dimensions: autonomy, belongingness, challenge, engagement, mastery, and meaning. This project examined the quality of participation of people in adaptive snowsports programs using the QPFF, and evaluated how it is explained by different variables related to programs' and individuals' characteristics.

Methods

An online survey was completed by skiers and snowboarders with disabilities (n=140) participating in adaptive snowsports programs in Canada. The survey included the validated Measure of Experiential Aspects of Participation (MEAP), a 12-item questionnaire to measure the 6 dimensions of the QPPF. The survey also included items on snowsport experience (i.e. type of snowsports, duration and frequency of participation), programs resources and barriers (i.e. equipment used, instructors, program resources, barriers), as well as demographics (age, occupation, type of, impairment\disabilities). Descriptive analysis was first completed and then a backward stepwise regression will be used (on-going) to determine if the subscales scores of the MEAP are independently associated with any of the other variables (program resources, snowsport experience, demographics).

Results

The participants in adaptive snowsports were mainly male (66%), under 18 yrs (53%) and living with a variety of impairments. Most participated in individualized lessons through one program (79%), once or more than once a week (56%), and over more than one season (65.2%). They used a great variety of adaptive equipment, received support from many instructors (more than 2: 69%) that help them with skill building, emotional and physical support. They also faced multiple barriers (e.g. physical condition, planning, transportation). Participants reported high "quality of participation" across each subscale: the mean scores ranged from 6.29 (on 7) for belongingness to 5.58 for meaning. The results of the regression will be ready for the conference.

Discussion

The descriptive results showed that the participants represent a variety of individuals with disabilities that were involved regularly and long-term (more than a year) in adaptive snowsports. Resources such as equipment and instructors were central for them. Adaptive snowsports was offering the participants opportunities to experience quality of participation on the six dimensions of the QPFF. The regression analysis will confirm our understanding of how quality of participation could be explained by other important dimensions of the adaptive snowsports experience.

Keywords: Adaptive snowsports, quality of participation, health promotion

# PHYSICAL ACTIVITY EXPERIENCES OF FAMILIES OF CHILDREN WITH VISUAL IMPAIRMENTS AFTER A PARENT-MEDIATED PHYSICAL ACTIVITY PROGRAM

Abstract ID: 171

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Aim

Children with visual impairments (VI) may experience barriers when engaging in physical activity (PA). Barriers may include a lack of opportunities that promote PA participation of children with VI and parents lacking the skills to teach PA to their children. A prior study found that following the parent-mediated physical activity intervention, parents had future intentions to include their children with VI in PA (Columna et al., 2020). The purpose of this follow-up study was to explore the experiences of the families of children with VI in physical activity participation three months after completing the intervention.

Methods

This descriptive-qualitative study was situated in the Theory of Planned Behavior (TPB) to determine how an intervention can ultimately impact physical activity participation. Three months after the completion of a parent-mediated intervention consisting of a series of workshops and PA opportunities for parent and child, five parents took part in individual semi-structured interviews that were subsequently transcribed and analyzed by a team of researchers using a thematic line-by-line analysis (Merriam, 1998).

Findings

Parents described their desires and concerns for their child with VI to engage in PA Through the data analysis two initial themes have emerged: a) parents creating opportunities, and b) parents need for More. The awareness of what their child could do and parents efforts to advocate and teach their child resulted in parent's exposure to new types of PA in the community and at home. Yet, in the community, parents still experienced a lack of consistently offered community-based physical activities offered for their children with VI.

Conclusions

Participation in PA following an intervention for families of children with VI is based on multiple factors and stems from parent's knowledge of their child's abilities and awareness of possible activities in different settings. Parents are seeking opportunities to engage their child in PA at the community-level. While some parents were successful in engaging their children with VI in PA, opportunities for engaging in PA remain scarce. Researchers and community partners must consider the importance of educating parents on how to teach skills, increase awareness, and advocate for an increase in the number of community-based PA programs for their children with VI.

Columna L, Streete DA, Rocco-Dillon S, Hodge SR, Prieto L, Myers B, Barreira TV, Heffernan KS. (2020). Parents' intentions toward including their children with visual impairments in physical activities. Disability Rehabilitation. 42(5):667-678. doi:10.1080/09638288.2018.1505969.

Merriam, S. B. (1998). Qualitative research and case study applications in education. Revised and expanded from "Case study research in education.": Jossey-Bass Publishers, San Francisco, CA.

Keywords: Parents, Visual Impairment, Descriptive, Qualitative

# YOUTH PARTICIPATION IN A WHEELCHAIR TENNIS PROGRAM

Abstract ID: 26

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Aim

In this research, we examined the experiences of participation of disabled athletes, their caregivers and coaches enrolled in a wheelchair tennis program in Eastern Europe in furthering our understanding of models responsive to changing and dynamic conditions (Haslett & Smith, 2020; Stepaniuk, 2019). We address a gap in the literature base by investigating how participating in wheelchair tennis program impacted the athletes sense of self and explore the experiences of family members in negotiating the social and cultural influences in making sense of their children's athletic experience. We adopted a social relational lens as critical for distinguishing between impairment and the personal experience of impairment due to the restrictions within social settings (Reindal 2008; Thomas, 1999).

Methods

Data collection included field notes, semi-structured and focus group interviews with 6 athletes (4 males, 2 females) and 8 adults (4 mothers, one father and one grandmother, program coordinator, and wheelchair tennis coach). All interviews were translated and transcribed verbatim, subjected to coding and contextualizing procedures respecting the linguistic characteristics of each participant. In analyzing the data, contextualizing strategies were applied with the coding procedures as identified within social relational theory (SRT). Contextualizing strategies "locate the phenomenon in the personal biographies and social environments of the persons being studied" (Denzin, 2001, p. 79).

Results

SRT was used to frame the athletes' experiences of participation in a wheelchair tennis sports program. Additionally, we examined the shared relationships between and among family members in resisting the inherent challenges and social biases of an ableist narrative. Three primary themes were identified: 1) the impact of structural disablism, 2) disability as a hierarchical category, and 3) constructing alternative 'competent' identities). The themes, taken together, describe the challenges faced by the athletes and their families within a culture that marked them as different. Despite the difficulties, the athletes were able to (re)construct identities grounded in their athleticism and shared experiences. Furthermore, their travel to competitive events served to validate their competence and skill.

Discussion/Conclusion

This research adds to an appreciation of the experiences of disabled athletes and the complexity of their experiences. Secondly, the research demonstrates the utility of a social relational lens for recognizing athletes' experiences of structural and psychological barriers. Our recommendation is for continued research examining the experiences of disabled athletes and their families to assist coaches and other educators in advancing programs suited to athletes' needs, interests and abilities.

Keywords: social relational, ableism, wheelchair tennis, disability, qualitative research

# SUPINE-TO-STAND AS A PREDICTOR OF BODY WEIGHT STATUS FOR YOUTH WITH AND WITHOUT VISUAL IMPAIRMENTS

Abstract ID: 79

Ali Brian [1], Danielle Nesbitt [2], Adam Pennell [3], Alexandra Stribing [1], Emily Gilbert [4], Matthew Patey [5], David Stodden [1]

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Aim

Supine-to-Stand time and modal components (STS) are measures of function across the lifespan previously used for individuals without visual impairments (VI). STS can relate to factors that predict positive developmental trajectories for health such as body composition. Youth with VI often show greater difficulties with multiple aspects of health including physical activity, body composition, and motor competence than peers without VI. Thus, it was important to establish STS as a measure of function for youth and adolescents with VI as compared to peers without VI. The purpose of this pilot investigation was to evaluate STS for youth with VI, as compared with youth without VI, and to explore how sex, degree of VI, age, STS time and components predicted body mass index (BMI).

Methods

Participants (N=209; VI=78; NoVI=131), ages 9-18 years (M=12.69 years, SD=2.58 years) completed the STS assessment five times in a row. STS time and modal profiles were coded via DartFish.

Results

Scores from the 2 Sex x 2 VI ANCOVA showed significant main effects for sex and degree of vision ($p<.001$) but no significant interactions. Age was included as a significant covariate ($p<.001$). Results from a three-level hierarchical regression (model 1: age, sex, VI $R^2$=12%; Model 2: +modal STS components $R^2$ change=19%; Model 3: + STS time $R^2$ change=7%) showed that STS time was the strongest predictor of BMI (b=.35) followed by age (b=.26) and upper extremity modal STS scores (b=-.23). All models were significant ($p<.001$) and accounted for 35% of the total variance in BMI.

Discussion/Conclusions

Youth with VI showed significantly lower STS time and modal scores for STS components than peers without VI. Girls with and without VI also showed significant differences when compared to boys with and without VI. STS time, upper extremity modal STS scores, and age predicted BMI for youth with and without VI. Future research should explore how STS compares with measures of motor competence and physical activity behaviors for youth with VI.

Keywords: motor behavior, fundamental movement skills, blindness, health-related fitness

# INSTITUTIONAL PRACTICES IN THE LIVES OF YOUNG PEOPLE WITH PROFOUND INTELLECTUAL AND MULTIPLE DISABILITIES AND THEIR POTENTIAL TO PHYSICAL EXERCISE

Abstract ID: 41

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The presentation shows preliminary results of a 3-year research project dealing with young people with profound intellectual and multiple disabilities (PIMD) and their opportunities to sports activities and exercise. Its aim is to provide knowledge from rarely researched areas of the lives of young people with PIMD and their opportunities to participate in youth sport activities as meaningful leisure. Research data consists of observing physical activities of seven (7) young people with PIMD living in different parts of Finland, where sports activities take place, such as residencies for special support, activity centers, sports halls and venues, as well as nature.

Research data also includes theme interviews of their family members and supporting personnel. Research involves ten (10) centers providing special support for those young people, eight (8) family members and 11 members of supporting personnel. Severe physical and intellectual impairments and need for continuous support has been the basic criteria for selecting these young people, their families and supporting institutions for the research.

Current analyses shows that institutional living conditions determine the life practices of young people with PIMD to large extent, including those of sport activities and exercise. These practices are part of the day activities in activity centers with particular rehabilitative function, part of medical physiotherapy or part of the day program in residencies with special support. Yet many of those institutional practices enable various activities for them to have exercise, to experiment sports and to have meaningful leisure activities with exercise and sports entailed in them. However, different types of institutional, medical and managerial discourses struggle for dominance with the discourses based on human rights and rights for participation, when making these practices accountable and comprehensible in fieldwork settings. The research shows the basic elements of how meaningfulness of daily life of young people with PIMD is constructed and maintained in their leisure activities, and how the institutional practices serve as fields, where the opportunities for participation are under constant negotiation regarding to their abilities.

# STANDING LONG JUMP PERFORMANCE IN YOUTH WITH VISUAL IMPAIRMENTS: A MULTIDIMENSIONAL EXAMINATION

Abstract ID: 71

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Aim

Muscular fitness, an important marker of health in youth, includes power/explosive strength which can be assessed using the standing long jump (SLJ). The SLJ is a recommended measure of musculoskeletal fitness by the National Academy of Medicine and may be used as a general index of muscular fitness in youth. However, little is known concerning the SLJ in populations with disabilities such as youth with visual impairments (VI) who trend with decreased health- and movement-related outcomes. Further, SLJ investigations have historically been monophasic in nature (i.e., focus on the take-off). Thus, studies that are multidimensional in nature (e.g., include the landing phase) are needed. The purposes of this study were to investigate multidimensional SLJ performance outcomes in youth with VI and to explore bivariate relationships among such variables and known factors of interest (e.g., degree of vision).

Methods

This study was a secondary analysis from data collected in 2018 at two summer camps located in the eastern United States (New York; Florida) for youth with VI (N=61, Mage=12.98 years, SD=2.21). Developmental sequences for the SLJ landing, the Test of Gross Motor Development-3 (TGMD-3) horizontal jump score, and SLJ distance were calculated. Further, one item from the Landing Error Scoring System (i.e., displacement at landing) and a novel item assessing supplementary postural strategies/outcomes at landing were coded. Two scored jumps were performed. Values from the trial with the largest SLJ distance were used for the primary inferential analyses (i.e., individual robust linear bivariate regressions). Frequency counts provided additional descriptive results (e.g., most common landing profiles).

Results

The average maximal SLJ distance was 1.15 meters (SD=.48) which had an average landing developmental sequence score of 5.31 (SD=1.36). The average TGMD-3 score was 4.51 (SD=2.29). The most common landing developmental sequence profile was 1-2-2 (~35%) followed by the 1-2-1 (~14%). Per the Landing Error Scoring System displacement item, participants tended to land stiffly (~75%). Using the novel item, most individuals tended to stick the landing (~40%) or needed to take one to two steps (~35%; i.e., mild intervention) to maintain their postural control. Maximum SLJ distance was associated with the TGMD-3 jump ($R^2$=.31), displacement score ($R^2$=.22), and the presence of a comorbidity ($R^2$=.12), Summed landing developmental sequence score was associated with maximal SLJ distance ($R^2$=.42), the TGMD-3 jump ($R^2$=.33), displacement score ($R^2$=.17), and degree of vision ($R^2$=.03).

Discussion/Conclusions

Youth with VI appear to have suboptimal SLJ performance. SLJ landing, TGMD-3 jump score, maximal jump distance, and displacement appear to be associated. Future investigations should determine if multifaceted SLJ outcomes could be used as a valuable and utilitarian metrics for identifying health-related discrepancies in youth with VI.

Keywords: broad jump, horizontal jump, blind, muscular fitness, power

# Wednesday 16th June 2021

## Parallel session 3

# INCLUSION IN PRIMARY PHYSICAL EDUCATION IN EUROPE THROUGH THE LENS OF AN ERASMUS+ PARTNERSHIP: SO WHAT NOW?

Abstract ID: 72

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Aim

This study employed data collected from the Disentangling Inclusion in Primary Physical Education (DIPPE) Erasmus + project. The purpose of the study was to (1) map the situation with regard to including children in primary physical education (PE), especially those children with additional needs (AN) and (2) identify the guidelines and resources that teachers of PE in primary schools would welcome to support them in including children with AN in their lessons.

Methods

A quantitative study was undertaken using a questionnaire delivered online via Qualtrics xm. Teachers who teach PE in primary schools in Europe were invited to provide their responses. A total of 1,651 questionnaires were returned from 19 European countries. The completion rate of the questionnaire and the total number of responses per country were used as the criteria for respondents' inclusion in the analysis sample. Only respondents with at least 80% completion rate and countries with at least 20 responses in total were included in the analysis sample (n=1,206). The statistical analysis of data included descriptive and inferential statistics.

Results

Over 60% of teachers ranked inclusion in PE in primary schools as important in their countries. Nevertheless, only 30% of children with AN in European countries were reported by their teachers as being always included in PE lessons. A considerable proportion of teachers (15.7%) reported having more than five children with AN in their PE classes. The percentage of teachers who indicated that specific support is provided to children with AN in PE lessons was 25.3%. The most frequently experienced AN in PE lessons was motor (34.6%). The most popular aspect of AN on which teachers would welcome guidance was children's motor needs (55.2%). The most popular support identified was video practical case scenarios (60.3%). Statistical tests conducted to check the relationships between teacher competence and their students' engagement levels with individual and contextual characteristics did not yield statistically significant results ($p < .05$).

Discussion/Conclusions

The findings shed light on the specific supports that teachers would welcome to include all children in PE lessons rather than merely having them 'fitting in'. Despite some encouraging findings, some results are of concern. While the survey reported positive specific support provided to children with AN, it is crucial that teachers are aware of the importance of questioning the withdrawal of children from PE lessons for this support. Reflection instead could focus on how activities may be adapted to include them further. Based on the survey results, the DIPPE project partners have created a free open online resource to support primary school teachers to access information about inclusion and inclusive practices in PE towards improving the experiences of children with AN. The website will be piloted at national events in the partner countries in the autumn.

Keywords: Physical Education, Primary Teachers, Inclusion, Supports, Erasmus+

# IMPROVING THE LEARNING ENVIRONMENT IN PHYSICAL EDUCATION - A SYSTEMATIC REVIEW FOCUSING ON STUDENTS WHO MEET DIFFICULTIES IN SOCIAL INTERACTION

Abstract ID: 28

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Aim

In this systematic review, we present results of how teachers can create better conditions for students, with or without disabilities affecting social interaction, who meet challenges with social interactions. We aim to answer the research question: How can teaching physical education be designed so that students who experience difficulties with social interaction are provided with good conditions for participation, development, and learning? Method Quantitative and qualitative studies published between 2000 and 2019 were included in the search. Of 8079 studies, 11 studies fulfilled the Swedish Institute for Educational Research and the National Agency's relevance and quality assessment checklist. The studies included interviews, observations, interventions, or surveys. The students were from first year in primary school up to last year in high school.

Results

The results were divided into three themes of importance for improving the learning environment in physical education 1) the importance of trusting relationships, 2) providing structure and support 3) creating a positive learning climate. The first theme describes the importance of relationships. Student experienced that teachers who acknowledge all students' experiences and were attentive to their opinions could strengthen the relationships. When the solidarity between students in the classroom was strong, students felt they were part of the group, which contributed to the learning environment. The second theme describes the importance of providing structure in the form of good and clear planning, explanations, and varied opportunities for students to perform a task. Students requested increased predictability of the lesson provided them with a feeling of control. The third theme emphasizes the importance of increasing students' self-efficacy e.g., students experience of competence and their belief in their ability for a more stimulating learning environment. The results indicate that creating an atmosphere that is not too performance oriented is eligible. When physical education becomes a learning opportunity rather than a measurement, it contributes to increased participation. A specific teaching method, autonomy-supported teaching, was emphasized in some of the studies to have social-relational benefits. This type of teaching includes attentive listening, taking students' perspective, creating opportunities to give feedback on teaching and providing enough time to complete different tasks.

Conclusion

Ensuring a learning environment for all students in physical education, regardless of ability, experience, and knowledge, is not a responsibility for teachers alone, it concerns and involves all levels in the school organization. The management, principals, legal guardians, teachers, and students need to work together. This systematic review was a collaboration between the Swedish Institute for Educational Research and the National Agency for Special Needs Education and Schools

Keywords: adapted physical activity, inclusive education, special needs, teaching

# INCLUSIVE PHYSICAL EDUCATION IN GERMANY FROM THE PERSPECTIVES OF STUDENTS WITH INTELLECTUAL DISABILITIES – A QUALITATIVE STUDY

Abstract ID: 62

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[1]University of Wuerzburg

Aim

While international research has widely addressed the perspectives of students with a handicap on inclusive PE, most of these studies focus on students with a physical handicap. Therefore, our interdisciplinary study tries to make the voices of students with intellectual disabilities in inclusive PE classes heard. To our knowledge, this is the first study addressing this subject in Germany. Our research questions were threefold: Firstly, we wanted to find out how students with intellectual disabilities experience inclusive PE. Secondly, we wanted to see, whether these students “only” take part or actually socially participate in these classes. As a theoretical framework of social participation we recurred on the model of Koster et al. (2009). This model was particularly developed for a physical education context and has been used in various studies in Germany. Finally, we wanted to check the possibilities and limitations of qualitative interviews with people with intellectual disabilities.

Methods

According to the aim of the study we employed a qualitative design. 17 semi-structured interviews were conducted in two different settings with secondary school students with intellectual disabilities (aged 12-14, 8 female, 9 male). Included were all students of these two settings with the diagnosis ID and a basic oral speech competence. The data was analyzed by means of a qualitative content analysis.

Results

The data analysis shows that the interviewed students experience inclusive PE basically in a positive way and feel comfortable. However, this experience seems to depend on different factors like the teachers, time spent together at school or the particular setting. Most aspects of our theoretical framework of social participation were also perceived positively by the students.

Discussion/Conclusions

Although the data analysis seems to produce mainly positive results, we have to add some concerns. Firstly, at least with some interviews we are not sure about the reliability of the answers. In addition, some of the statements of the students made the impression of being socially desired/learned. Finally, the relationship between the students with and without intellectual disabilities seems to be asymmetric in a way, that the students without intellectual disabilities are the ones who can/should help the students with intellectual disabilities. The interviews also show that interaction between the two groups seems to be limited to PE class. Thus we conclude that taking part in an inclusive PE offers students with intellectual disabilities chances of social participation, but doesn’t necessarily mean that they do socially participate. References Koster, M., Nakken, H., Pijl, S.J. & van Houten, E. (2009). Being part of the peer group: a literature study focusing on the social dimension of inclusion in education. International Journal of Inclusive Education, 13, 117-140.

Keywords: Inclusive Physical Education, Students´ Perspective, Students with intellectual disabilities, Qualitative Research

# INCLUSIVE PHYSICAL EDUCATION: LOVE, RIGHTS AND SOLIDARITY

Abstract ID: 51

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Research indicates that physical education is a particularly challenging arena for children with disabilities. Yet, children's experiences are seldom explored in physical education research.

In this presentation I explore narrations of inclusion, exclusion and recognition in general physical education shared by children with disabilities and their parents. The theoretical framework draws on Axel Honneth's three forms of recognition: intersubjective relations of emotional recognition (love), legal recognition (rights), and solidarity.

Fifteen elementary school children with diverse disabilities and 26 parents participated in study. Thematic analysis of the interviews yielded three themes: (a) physical inclusion: being an insider, outsider or in-between; (b) pedagogical inclusion: experiences of recognition, misrecognition and legitimate participation; and (c) social inclusion: intersubjective relations and friendship.

The themes highlights children's feelings of recognition as being valued as a legitimate participant, recognized for their competencies, being met with optimally high expectation, co-determination, and friendship. On the other hand, the themes problematize children's feelings of misrecognition such as selective or forced exclusion, being forgotten, lack of adaptation, and adapted measures experienced as disabling. Combined, the children and parents narrations illuminates the situational complexity of recognition and temporality of inclusion, and how children navigated experiences of exclusion and misrecognition in physical education. The presentation ends with a discussion of possible implication for practice.

Keywords: children, disability, exclusion, inclusion, physical education, recognition

# CONTACT ANXIETY AND ATTITUDES TOWARD INCLUDING PEERS WITH PHYSICAL DISABILITIES IN INCLUSIVE PHYSICAL EDUCATION: THE ROLE OF EMPATHY

Abstract ID: 57

Chunxiao Li [1]

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Aim

The study was undertaken to examine the relationship between contact anxiety, empathy, and attitudes toward the inclusion of peers with physical disabilities in inclusive physical education.

Methods

A sample of school students (n = 218, Male = 52%) completed a survey form measuring the interested study variables.

Results

The results of path analysis indicated that contact anxiety and empathy were significant predictors of attitudes. In addition, empathy played a mediating role in the relationship between contact anxiety and attitudes.

Discussion/Conclusions

These findings further our understanding of students' attitudes toward including peers with physical disabilities.

Keywords: inclusion, perception, compassion, worry, student

# SPORT PSYCHOLOGICAL SKILLS TRAINING (PST) IN ELITE DEAF SPORT: DIAGNOSTIC AND OTHER INTERVENTION-RELATED CHALLENGES

Abstract ID: 52

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[1]OTH Regensburg

There is a substantial lack of literature on Psychological Skills Training (PST) with elite athletes with hearing disabilities. Yet such knowledge is necessary to conduct PST programs addressing the special needs of these athletes. Therefore, the current empirical study was designed to analyze the applicability of the Test of Performance Strategies (TOPS) questionnaire as an appropriate sport psychological diagnostic instrument for these athletes. Furthermore, key parameters for PST effectiveness were investigated as well.

The German version of TOPS (Schmid, Birrer, Kaiser & Seiler, 2010) was administered to 84 athletes of the German Deaf-Sport Association (DGS) from eight different sport fields with the assistance of sign-language interpreters.

Whereas sufficient internal consistency values were obtained in some subscales (e.g., Relaxation in competition; Cronbach's $\alpha$ =.72), the values in other subscales implied considerable misunderstandings (e.g., Attentional Control in training; $\alpha$ = .27). The study's main finding is that the use of psychometrically-tested and standardized surveys with athletes with hearing disabilities is possible only to a limited extent.

The results demonstrate the importance of further research on appropriate diagnostic measurers for athletes with hearing disabilities. Moreover, there are particular additional parameters to be considered in the PST process itself while working with these athletes.

Keywords: Psychology, Deaf Sport, Diagnostic, Performance

# COUNTERACTING MOTOR DELAY: A FATHER AND CHILD PLAYFULNESS EXPERIENCE

Abstract ID: 142

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[1]NU Fairview, [2]University of the Philippines Diliman

Aim

This study aimed to explore the influence of paternal playfulness in improving the physical activity of a child with motor delay. Thus, inspired by the Lamb (2010), the characteristic of father being playful to his child, created significant impact on his child's well-being. He further pointed out that in studies that involve play between child and parents, the brand of play the father engages with his child makes him more of a prominent figure in his child's life.

Methods

It is in this context that the researcher and father of an 8-year-old boy with Epilepsy (with motor delay), delved on the impact of a 10-week, 1-2 hours of father and child playfulness experience on his child's motor abilities development. Quantitative design was utilized to measure the degree of change (pre and post-tests) in the child's physical capacities through the Test of Gross Motor Development-2 (TGMD-2). The qualitative case study (ethnographic in approach) utilized "on the scene, hands on" phenomena to acquire deeper understanding of the child and his reciprocal interaction to the researcher-father during unstructured playful activities. Journal writing recorded narratives of personal reflections and musings. Due to the strict quarantine-lockdown protocols caused by the pandemic, all physical activities were conducted within the confines of the residence of the father and son.

Results

Pre- and post-test results of TGMD-2 observed improvements on child's gross motor ability: Locomotor raw score from 31 to 36; Object Control score from 29 to 30; the Standard Score Sum of post-test performance from 9 to 10, an equivalent of 70 in his Gross Motor Quotient; and Qualitative Rating from Very Poor for his age to Poor. However, his overall motor skill level still fell short for the average rank of children his age. On the other hand, confidence in moving, awareness of body, improved participation in and appreciation of physical activity were observed with the different opportunities presented to the child.

Discussion/Conclusions

Falling short of the standard average skill for child's age may be attributed to the lack of repetition and regular practice of specific movement skills as there was limited space in the conduct of physical activities brought about by the lockdown during the pandemic. With unstructured play (interest-based and child-led) child's preference of the father as his constant playmate were noted from anecdotes: "Let's go out and play!"; "Dad can you please play with me?"; "I have so many ideas in my mind. Let's play again". Spontaneous and respectful of the child's play decisions leads to a relationship between father and son to build regular play negotiations, activity adjustments and constant encouragement, truly becoming a father and child playfulness experience.

Reference Lamb, M. (2010). The Role of the Father in Child Development. 5th edition. Wiley. NJ: USA.

Keywords: paternal playfulness, physical activity, motor delay, motor learning

# PERCEPTIONS FROM CHILDREN WITH DISABILITIES AND THEIR PE TEACHERS ABOUT LEARNING N AN INCLUSION IN THE SUBJECT OF PE IN SWEDEN

Abstract ID: 129

Lars Kristén [1]

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Aim

In Sweden children have the right to education and schooling is compulsory. The school subject Physical Education (PE) can contribute to an increased range of physical activities, sports also for children and young people with disabilities, which in turn can lead to positive physical, mental, social and existential effects. The purpose of the project is to map perceptions of children with disabilities and their PE teachers about learning in included teaching in the subject PE. To gain knowledge of what measures are important for increased learning for children with disabilities in inclusive education, in order to thereby strengthen their participation in school and society.

Methods

Qualitative analysis with a phenomenographic method is used as a research approach. inclusion criteria were school classes with children with and without disabilities. Interviews are conducted with 8 children aged 10-14 years with physical disabilities (ADHD (n=2), asperger (n=1), autism (n=1) , cerebral palsy (n=3), muscle disease (n=1) and 8 teachers in PE about their perceptions of learning in included teaching in PE. Children and teachers are evenly distributed across the sexes. With the help of analyzes of interviews and compilation of different types of description categories, perceptions are examined in a so-called phenomenographic outcome space. The process focuses on mapping perceptions and examining how perceptions relate to each other and to the phenomenon under investigation.

Results

Different descriptive categories highlight the variations that appear in the answers from children and teachers. The descriptive categories for children are described in the following order: Finding confidence in the teaching of PE; Finding confidence in one's physical ability; Finding faith in inclusion in PE; To find confidence in expressing opportunities and obstacles during the teaching of PE. The following are the descriptive categories for PE teachers in the following order: To promote participation in the teaching of PE; To promote learning in PE; To promote inclusion in PE; To promote differences in the teaching of PE.

Discussion

The children with disabilities reason about awareness of the limitations with their bodies and express interest in physical activities, but hesitation before moments where the limitations are noticed. This may indicate that the teaching does not meet the children's need for movement but needs to be developed. The PE teachers clarify a class-wide perspective on learning that can develop knowledge for children both with and without disabilities. The PE teachers state a high degree of commitment and motivation regarding inclusion in the teaching, but point out the lack of knowledge and competence-enhancing measures within the school. This may indicate that the teacher programs do not spend so much time on perspectives on disability and a lack of further education after completing studies.

Keywords: children with disabilities, compulsory school, inclusion, Physical Education Teachers

# Parallel session 4

# RESULTS OF A PHYSICAL TRAINING PROGRAM IN AMBULANT CHILDREN WITH CEREBRAL PALSY: RETENTION OF OUTCOMES POST COVID-19 LOCK-DOWN

Abstract ID: 215

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Aim

Children with cerebral palsy (CP) are considered sedentary and interventions are recommended to improve physical activity. We describe the physical outcomes of a high-level mobility training program in children with CP in a study carried out in the context of a worldwide pandemic.

Methods

A single subject research design was conducted. Ambulant children with CP, were invited to participate in a high-level mobility program in the community, providing task-specific training of running skills. Inclusion criteria were: Gross Motor Function Classification System (GMFCS) I-II, age 7 -18 years and able to follow instructions. Exclusion criteria were surgical interventions in the past six months. Participants were sought through purposive sampling from health care and community settings. Repeated measures of physical capacity Muscle Power Sprint Test (MPST), 10x5m Sprint Test (Agility Test), 10m Shuttle Run Test (SRT) and High-Level Mobility Assessment Tool (HiMAT) were collected at baseline, pre-intervention (six weeks later), post-intervention (12 weeks later) and follow up (six months post-intervention). Minimal clinical important differences have been established: MPST (mean power output >18 Watts), Agility Test (reduced time >3.2 seconds), HiMAT (2-point increase over three months) and SRT (GMFCS Level I: >0.85min or 1 level change; GMFCS Level II:>0.5min = ½ level change).

Results

Eight children (11-16 years, seven males) participated. Seven children attended a median of 23/24 sessions, one participant did not attend training but did participate in data collection. Post intervention, clinically important differences over baseline were seen in MPST (n=6 of 8), Agility Test (n=1 of 8), HiMAT (n=5 of 8) and SRT (n=6 of 8). Three months into the follow up phase of the study, New Zealand committed to an elimination strategy for COVID-19, with a State of National Emergency declared between 25 March and 13 May 2020. Schools, Universities, playgrounds and all but essential businesses were closed, movement by car or public transportation permitted only for essential workers, and physical distancing enforced. Community parks remained open but all sporting activities were cancelled. Post lock-down (six months post intervention), participants maintained clinically important differences in both MPST (n=6) and SRT (n=5), and improvements in Agility Test (n=2) and HiMAT (n=6); despite limited variety and location of physical activities.

Discussion/Conclusions

Children with CP can safely improve their performance in running and high-level mobility skills following a community-based task-specific goal-directed program, with sustained skills acquisition and physical capacity for six months post-intervention. COVID-19 lock-down, with minimal community activity availability, did not negatively impact the physical performance of ambulant children with CP, post training.

# EMANCIPATORY RESEARCH IN APA WHEN PERSONS HAVE SEVERE OR PROFOUND INTELLECTUAL DISABILITIES

Abstract ID: 95

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This presentation builds upon an upcoming project where I aim to include the perspectives of persons with severe or profound intellectual disabilities when they take part in adapted physical activity. The main aim of the project is to investigate whether accreditation of movement as expressitivity can contribute to make emanicpatory disability research more inclusive by making the perspectives of those communicating pre-symbolically visible in research. Contemporary disability research within the field of intellectual disabilites have increasingly promoted emancipatory approaches, where persons with intellectual disabilites are seen as co-researchers, not as objects for research. Despite good intentions and important results gained from this research, there seems to be a constructed limit demarcating which persons with intellectual disabilities are accredited as competent participants in research and which are not. Co-researchers that are able to speak or to perform other forms of symbolic language have had their voices heard, while those with the more complex and severe forms of intellectual disabilities are to a minor degree represented.

This project aims to include subjective perspectives of persons with severe and profound intellectual disabilities as they participate in adapted physical activity at a rehabilitation center. Finding support in the embodied phenomenology of Merleau-Ponty in general and in his writings about "Indirect language and the voices of silence" in special, this project aims to describe a possible way of acknowledging those with the most severe forms of intellectual disabilities as contributors in emancipatory research. In the embodied phenomenology of Merleau-Ponty, movements are accredited as a phenomenon that sums up and express subjective perspectives. Merleau-Ponty claims that lives with disabilities are fully worthy ways of being, yet, qualitatively different from lives without disabilities. For every human being, each perception is intentional and a carrier of meaning, and each movement is an expression of subjective experience. The rehabilitation center provides this project possibilities to attend to a wide range of movement experiences together with persons with severe or profound intellectual disabilities. In the rehabilitation center, adapted physical activities are means and ends, framing a context where movement is the hub of experiences. Finding support in the methodology Phenomenology of Practice as described by Van Manen, I will participate in close observations, a method suitable when aiming to investigate tacit perspectives in health-care and in pedagogical institutions.

Keywords: Severe and profound intellectual disabilities, emancipatory research, pre-symbolic communication, embodiment

# ONLINE PHYSICAL ACTIVITY PROGRAM FOR CHILDREN WITH SPECIAL NEEDS DURING THE COVID-19 PANDEMIC: PARENTS' VIEWS

Abstract ID: 168

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Aim

The research aims to explore parents' views on the benefits of online physical activity (OPA) involving children with special needs (CSN) during the COVID-19 pandemic. During the COVID-19 pandemic CSN, who were at risk, were more inactive than ever before. During the pandemic, the length of time the parents of CSN stay at home with their children has increased, so they needed to desining fun and educational activities. It is clear that the parents needed educational support for their CSN during the pandemic period.

Methods

The research is designed in qualitative research method. First of all, phone calls were made with the parents who were contacted through the directors of the institutions and the purpose and ethical rules were explained. As a result, 10 mothers and 2 fathers of CSN had accepted to participated in this study and reported their experiences with 7 boys and 5 girls. The children had a mean age of 11 years (range 5–17) and the diagnoses comprised eight with down syndrome, four with intellectual disabilities. The children performed the OPA which is mild-to-severe aerobic type 30-min, 3 days/week for 18 weeks. The OPA was delivered through live connection in digital environment by 21 voluntary trainers who specialists in adaptive physical education and sports. Following the application of 18-week OPA, research data was obtained by making in-depth interviews by phone with 12 parents of CSN whose children participated the OPA. The data obtained by using semi-structured interview technique was analysed with the content analysis method.

Results

The opinions obtained from the parents of CSN indicate that psychological health of the CSN improved and their wellbeing increased thanks to the OPA. On the other hand, thanks to OPA, both other siblings at home became active and social communication between the CSN and the siblings has strengthened. Another opinion suggests that OPA meets the need for peers and helped with a happier family climate. The parents expressed that their CSN, who are in need of much more physical mobility compared to their peers, needed more mobility during the pandemic period than they needed before, due to the accessibility problems, and the needs of the children for physical mobility were met with the OPA.

Conclusions

Based on the opinions obtained from the parents, OPA has a positive effect on the quality of life and social development of CSN. The positive opinions of the parents, about OPA is very important in ensuring the wellbeing of the child in home environment during the pandemic. In conclusion, OPA is recommended for the CSN to maintain their psychological, social and physical wellbeing during the COVID-19 pandemic.

Keywords: online physical activity, children with special needs, COVID-19

# PHYSICAL ACTIVITY AND PROBLEMATIC INTERNET USE RELATED HEALTH RISKS IN ADOLESCENTS

Abstract ID: 139

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There is substantial research on the role of the Internet to enhance adolescences' opportunities to learning and engage with others from on hand and promoting long term adverse effects of excessive and addictive Internet use leading to negative health consequences, from other hand. However, limited research presents evidence on relation between Internet use and health risks in adolescents with disability. This study aimed to compare relationship between problematic internet, healthy lifestyle behaviors and subjective health complaints between adolescents with and without disability.

Methods

Participants were 49 adolescents with mild and moderate learning and physical disabilities (furthermore indicated as AWD group) (mean age 12.15 years, SD = 1.01) and 91 adolescents without disability (furthermore indicated as A group) (mean age 11.28 SD = .70). A composite score of the Problematic and Risky Internet Use Screening Scale (PRIUSS) contained social, emotional and risky/ impulsive internet use variables. The subjective health complaints explored were somatic and psychological health difficulties, while the healthy lifestyle included physical activity (PA), eating habits and screen-based behaviors.

Results

Participants in both groups reported very limited physical activity time that is significantly lower than indicated in the WHO guidelines - 60 min daily vigorous- moderate PA (1.60 h/week for adolescents with disability (AWD), 2.95 h/ week for adolescents without disability (A), $p < .05$). Also, both groups indicated significantly increased average time spent by screens during weekends (3.94 h for AWD, SD = 2.55 h and 3.20 h for A, SD= 1.76, $p < .05$) than during weekdays (2.8 h for AWD, SD = 2.02 and 2.5 h for A, SD = 1.33, $p < .05$). PRIUSS mean scores were under risky PIU level (19.11 for AWD, SD = 10.14, and 17.20 for A, SD = 9.23, $p > .05$). Prevalence of subjective health complaints was higher regarding psychological health (range 32-52%) compared to somatic complaints (range 20 – 37%). A significantly higher proportion of AWD reported somatic health complaints ($p = .00$), while the prevalence of psychological complaints was significantly higher in A group ($p = .025$) Regression analyses indicated that subjective health complaints and healthy lifestyle reports contributed 13.3 % of the variance in PRIUSS scores. The psychological health complaints significantly impacted the PRIUSS outcome ($p < .05$), while somatic health complaints and healthy lifestyle behaviors did not have significant impact on the PRIUSS scores in this study.

Conclusions

The problematic internet use behaviors are significantly associated with psychological health complaints for adolescents with and without disability. 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".

Keywords: Adolescents with and without disability, healthy lifestyle behaviours

# CONSTRAINTS CAUSED BY COVID-19 IN THE PERIOD OF CONFINEMENT TO ATHLETES OF THE PORTUGUESE PARALYMPIC PREPARATION AND HOPE PROJECTS

Abstract ID: 128

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Introduction

The pandemic that is affecting the world has taken everyone by surprise, even leading several countries to resort to confinement for a certain period of time. Situation that brought a series of impediments in everyone's life and problems related to the labor market, the perception of health and sleep. Athletes are also prevented from attending their training location. In this sense, and in view of this scenario, we seek to characterize and compare the employment situation by gender, the perception of health status, the quality of sleep and the motivation to train for the athletes who are part of the Tokyo 2020 Paralympic Preparation and Portuguese Paralympic Esperance's projects.

Methods

45 athletes (13 female; 32 male) participated in the Tokyo 2020 Paralympic Preparation Projects and Paralympic Hopes, with an average age of 31.36 (± 11.23) years and 10.53 (± 5.17 ) years of experience in the sport. Data collection was performed through a questionnaire built and answered online, using Google forms, and created exclusively for this study.

Results

The results showed that during the isolation period, 6.8% of the athletes lost their jobs and 9.1% reported being in lay-off. Of the athletes who are employed, 79.5% remained at home and only 20.5% left to go to work. When asked about the general health status compared to the previous year, 65.9% reported that it was approximately equal, 22.7% slightly worse, 4.5% with some improvements, 4.5% much better and 2.3% how much worse. Regarding sleep quality, the results showed that 31.8% of the athletes considered it reasonable, 31.8% good and 25% very good. Compared to the usual hours of sleep, 40.9% of the athletes reported sleeping the same time, 38.6% sleeping less and 20.5% more during the confinement period. Regarding the motivation of athletes to perform training at home during the confinement period, 61.4% reported feeling very motivated, 36.4% little and 2.3% not motivated at all. When compared by gender, there were statistically significant differences in the perception of general health status ($p = 0.02$), with girls perceiving better health.

Conclusions

During the confinement period, most of the athletes who are part of the Tokyo 2020 Paralympic Preparation Projects and Portuguese Paralympic Hopes, remained at home and reported that their health status and quality of sleep remained reasonable and good. Most athletes remained motivated to train at home. So the social isolation did not bring major changes in sleep, health and motivation of these athletes.

Keywords: Paralympic Athletes, COVID 19, health, sleep and motivation

# "I REALLY DIDN'T THINK THAT VIRTUAL RIDE WOULD BE THAT GOOD": PERCEPTIONS ON THE BENEFITS OF ONLINE LEISURE-TIME PHYSICAL ACTIVITY (LTPA) FOR PEOPLE WITH DISABILITIES

Abstract ID: 60

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Aim

The COVID-19 pandemic and the associated lockdown and social distancing policies have exacerbated sedentary behavior and inactivity for everyone, but especially for people with disabilities. There has been an increase in the amount of online fitness and sports opportunities to help individuals be more active. However, fewer online programs focused on disabled participants. This project aims to explore the impact of offering online adaptive Leisure-Time Physical Activity (LTPA) to people with disabilities, especially the perceived physical, mental and social health benefits and the challenges to participation.

Methods

A mixed-method study (interviews and a survey) was conducted with participants in online adaptive LTPA programs as well as staff members. The online LTPA programs were offered by a community-based organization who delivered programs across the United States and included activities ranging from yoga, cycling, paddling training and fitness. In the qualitative part of the study, semi-structured interviews were conducted with 10 individuals with disabilities and 5 staff (completed). A survey was then developed based on the interviews to be completed by a larger sample of participants (currently ongoing). The qualitative data were analyzed using an inductive approach by two independent coders.

Results

The qualitative analysis revealed that one of the main benefits for the participants with disabilities was the social opportunity that the virtual LTPA programs provided. Individual with disabilities and staff members really felt it helped break social isolation and create a sense of community. A positive impact on mental health was also reported, for instance reduced anxiety and depressive moods. Physical health benefits were also associated with the virtual LTPA programs, such as increased strength and weight loss. The challenges in participation were mainly associated with the digital technology needed to participate. On the opposite, the fact that the individuals could do the activity directly in their homes and thus reduce transportation was seen as a great facilitator.

Conclusions

The results showed that online LTPA programs had many benefits that covered the physical, psychological and social health. The social impact was particularly salient and pointed out to the psycho-social dimension of recreational physical activity. It might be that this social dimension gained greater importance in the context of a pandemic, but it is interesting to note that the participants were getting it despite the virtual aspect of the activities. More research would be needed to investigate online LTPA in other contexts. These findings also suggest that offering online LTPA might reduce some barriers to participation typically experienced by individuals with disabilities such as transportation or accessibility.

# ASSOCIATIONS OF TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE WITH STRESS OF ADAPTED PHYSICAL EDUCATORS DURING COVID-19 LOCKDOWN

Abstract ID: 111

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Aim

Throughout the world, many schools were closed rapidly to prevent the spread of COVID-19. This led to most adolescents reducing their levels of physical activity and face-to-face learning opportunities, being worse among students with special educational needs. Remote teaching requires teachers to be competent in technological pedagogical content knowledge (TPACK). However, APE teachers' lack of confidence on information technology (IT) skills in APE combined with no or limited school administration support may be important factors influencing their stress. Therefore, the aims of this study were to investigate the associations of TPACK among European APE teachers during lockdown with perceived stress.

Methods

An online survey made available in English, French, Latvian, Lithuanian, and Portuguese was administered during May-June 2020. Background items such as school type, gender and teaching experience were included. Questions were from the TPACK-21-PE, a version consisting of 48 items in relation to the PE teachers' evaluation of their knowledge in using IT for delivering physical education using a 6-point scale. TPACK-21-PE has 7 subscales, and scores were averaged. A single item on perceived stress from 0-10 was the dependent variable in a multivariate linear regression analysis.

Results

Most of the APE teachers (n=122) who completed the survey were female (57%), over the age of 40 (71.3%), and taught students with special education needs (SEN) in mainstream schools (59%) rather than in special schools (41%). The mean stress score was 5.24 (SD=2.45). Pedagogical knowledge (mean=4.3, SD=.94) was highest and technological content knowledge the lowest (mean=3.2, SD=1.27) among the teachers. TPACK was positively associated with perceived stress (F=2.68, p=.015), specifically, technological knowledge (t=-2.86, p=0.005) and pedagogical content knowledge (t=-2.74, p=.008). The associations between TPACK domains and stress were not statistically significant.

Conclusions

The restrictions in schooling due to COVID-19 have placed more workload on APE teachers as well as stress. Areas of technological knowledge and pedagogical content knowledge were negatively associated with stress. Therefore, the provisions for 21st Century skills among APE teachers to engage in technological knowledge and pedagogical content knowledge may assist with perceived work stress and further research in these possible relationships is needed.

Keywords: TPACK, inclusion, special school, Europe

# QUALITY OF LIFE AND LEVELS OF PHYSICAL ACTIVITY IN ELDERLY DURING COVID-19 LOCKDOWN

Abstract ID: 53

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Aim

During the Covid-19 lockdowns, the main health precautions are directed towards elderly population in most of the European countries. In addition to safety, it brings isolation and inactive lifestyle. The restrictions affect various aspects of quality of life (QLF) including social relations and environment or physical and psychological health. Therefore, we presume differences in subjective quality of life measurements and active lifestyle BEFORE and DURING lockdown situation. Aim of the study is to assess QLF during the Covid-19 lockdown period and compare the results with those collected before lockdown. An emphasis is put on variables like gender, age, physical activity (PA) or independency level.

Methods

Research sample includes individuals aged 65+ with various living conditions. Data collection is conducted via on-line survey (expecting approx. 250 participants). The Czech version of the standardised WHOQOL-BREF (World Health Organization Quality of Life Assessment) questionnaire is used containing personalised questions on basic variables (frequency of physical activity, health condition, age groups, gender, living environment). Mann-Whitney U test and Kruskall-Wallis ANOVA test (p=0.05) are used to assess differences between variables.

Results

The research is part of university department project. To date, data from approx. 160 respondents were collected within the survey. Data collection conducted via internet survey affects randomization and participation of the oldest group (aged 90+). Data are processed and compared with data collected in previous, non-epidemic years (as a part of a master thesis).

Preliminary data of the presented study identify the quality of life (WHOQOL-BREF questionnaire) during the Covid-19 lockdown in the Czech Republic in adults 65+. We presume decreasing QLF in psychological health and social relations aspects. We expect changes to levels of physical activity defined by frequency (amount of weekly activity) due to missing organized lessons of PA. The organized group PA lessons are rarely replaced by exercising at home.

Conclusions

We expect a reduction in some of the QLF parameters. We assume lower PA frequencies compared to those from ´normal, non-epidemic time´ due to a less active lifestyle caused by social isolation and outdoor movement restrictions.

Keywords: Quality of life, elderly, active ageing, active ageing, lifestyle, lockdown

# Thursday 17th June 2021

## Parallel session 5

# PHYSICAL ACTIVITY RECOMMENDATIONS OF DIRECT CARE PROVIDERS FOR PEOPLE WITH INTELLECTUAL DISABILITIES

Abstract ID: 14

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Aim

The participation of people with intellectual disabilities in sport and exercise is anchored in the Convention on the Rights of Persons with Disabilities (CRPD) and in the current global physical activity guidelines from the WHO (2020). Direct care providers in the social sector play a decisive role in the practical implementation of physical activity for people with intellectual disabilities. Besides the own physical activity behaviour of direct care providers, a greater knowledge of positive effects of physical activity can result in more provided physical activity opportunities and social support for the target group. Therefore, the link between physical activity behaviour of direct care providers and their recommendation for people with intellectual disabilities reflective of fulfilling physical activity guidelines is investigated.

Methods

In total, 104 direct care providers from social service providers in Austria took part in the study (82 female, 21 male and one diverse person). The age ranged from 22 to 64 years (M = 41.39; SD = 10.26) with working experience of more than ten years (M = 11.64; SD = 9). The online survey consisted of the “International Physical Activity Questionnaire” (IPAQ-SF), adapted parts of the “Exercise in Mental Illness Questionnaire” (EMIQ-HP) and additional questions about one's own knowledge of physical activity guidelines and recommendations for people with intellectual disabilities.

Results

Of the 104 direct care providers, 23 (22%) did not fulfil the physical activity guidelines of 150 minutes of moderate to vigorous physical activity (MVPA) per week. Another 49 people (47%) fulfilled the criteria for more than 300 minutes MVPA per week. Care providers’ physical activity behaviour is related to the recommendation for physical activity for people with intellectual disabilities ($r = .408$; $p = .000$), however the duration recommended for people with intellectual disabilities (M = 168 minutes; SD = 111) is lower than direct care provider’s own physical activity behaviour (M = 386 minutes; SD = 276; $t103 = -8.64$; $p = .000$). Almost half of the direct care providers (47%) suggested less than the recommended 150 minutes MVPA for people with intellectual disabilities.

Discussion

The results suggest that the sample of direct care providers is well informed about the threshold or health enhancing physical activity. However, they recommend an insufficient amount of physical activity for people with intellectual disabilities compared to their own behaviour. A possible reason could be that there are still stereotypes on health restrictions with regard to physical activity for people with intellectual disabilities. Therefore, the dissemination of physical activity recommendations for people with intellectual disabilities will be a major target for health professionals, social workers and scientists.

Keywords: exercise, PA, sport

# HEALTH PROMOTING THROUGH INCLUSIVE SHUTTLE TIME BADMINTON LESSONS FOR YOUNG ADULTS WITH INTELLECTUAL DISABILITIES

Abstract ID: 8

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[1]Mississippi State University

Aim

Physical activity has been proposed as a context to foster healthy development of individuals and reduce the risk of many chronic problems. This study evaluates the impact of badminton lessons on health and wellness in young adults with intellectual disabilities (ID).

Methods

Eighteen participants with ID and with little or no experience in badminton were assigned to an exercise group (10 males and 4 females; age: 22.36±1.91 years) and a control group (4 males; age: 22.00±1.82 years). The curriculum was adopted from Badminton World Federation Shuttle Time Starter Lesson Plans. The exercise group practiced for 50 minutes each session, twice a week for 10 lessons with 7 typical peers, while the control group maintained a regular life schedule. Physiological measures, i.e., resting heart rate (RHR), blood pressure, and electroencephalographic (EEG) recording, body mass index; motor performance measures i.e., 6-minute walk test (6MWT), Special Olympics Individual Badminton Skills Assessment; and psychological measures, i.e., Zung Self-Rating Depression Scale, Exercise Self-Efficacy Scale were measured before and after the program. A Wilcoxon signed-rank test was conducted to compare pre- and post-tests in each group.

Results

Reduced RHR ($p = 0.04$), longer walking distances in the 6 MWT ($p = 0.006$), and better performance in badminton skills ($p = 0.005$) were evident in the exercise group. Further, an increased left frontal alpha asymmetry was seen ($p = 0.002$) in the exercise group with participants expressing positive effects after the inclusive badminton program. Finally, resting EEG frontal asymmetry seemed to be reflective of emotion in persons with ID.

Conclusions

Badminton training may improve health and wellbeing in adults with ID, and inclusive sports can motivate their participation. Future research is needed using a larger sample size, additional segregated exercise groups, and extended psychophysiological measures to explore the mechanisms involved in the benefits of badminton sports for individuals with ID.

Keywords: Inclusion, Badminton, EEG, Intellectual Disabilities

# EFFECTS OF ONLINE TRAINING PROGRAMME ON THE QUALITY OF LIFE AND PHYSICAL ACTIVITY LEVELS OF INDIVIDUALS WITH INTELLECTUAL DISABILITIES AND THEIR MOTHERS WHO STAY AT HOME DUE TO COVID-19

Abstract ID: 96

Dilara Özer [1], Aynur Aydoğan [1], Büşra Süngü [2], N. Beril Özer Tekin [3], Tuba Kapucuoğlu [4], Ayşenur Namlı [5], Duygu Ece Şimşek [1], Zeynep Zeynel [1]

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Aim

The purpose of this randomised controlled trial was to study the effects of online training program (OTP) on the quality of life (QoL) and physical activity (PA) levels of individuals with intellectual disabilities (ID) and their mothers who stayed at home due to the COVID-19.

Methods

Fifty individuals with ID and their mothers were randomly allocated to experimental group (EG) and sixty two individuals with ID to control group (CG). Individuals with ID in the EG participated in the PA program twice a week and music activities once a week for 12 weeks. Each session was 60 minutes. Mothers in the EG participated in the psychological counseling program 12 weeks, 80 min. per week, once a week. However, research carried out with 40 individuals with ID (Mean age: 31,7±5,7 years) and their mothers (Mean age: 56,0±10,0 years) in the EG because of leaving from the OTP and 52 participants with ID (Mean age: 32,0±4,5 years) and their mothers (Mean age: 59,0±6,0 years) in the CG due to the missing data during posttest. The data was collected from two different groups: Mothers and individuals with ID. "Personal information form", Turkish version of WHOQOL-BREF" and “International Physical Activity Questionaire (IPAQ) were applied to mothers. “Turkish version of WHOQOL-BREF & Disabilities Module and the IPAQ were applied to individuals with ID. The data was analysed using by Independent Samples t test, Mann-Whitney U Test, Paired Samples test, Wilcoxon Signed Ranks test, Pearson Chi-Square test.

Results

The CG decreased low level of PA (p=.019) and total PA ( p=.002) while the EG didn’t change at the end of the program (p>.05). There was a significant difference in moderate level of PA (p=.001) and total PA (p=.001) in favour of the EG. There was no change in the EG and CG in terms of the QoL (p> 0.05). However, the EG had higher scores in terms of psychological health (p=.047) and general health (p=.050) when compared with the CG. As to mothers, results were as follows; The EG didn’t change (p=.724) while the CG increased daily sitting times (p=.003). However, the EG decreased daily sitting time (p=.031) compared to the CG. The EG increased physical health (p=.001), psychological health (p=.006) environment (p=.006) and general health (p=.001) while the CG decreased physical health (p=.003) at the end of the program. The EG increased all sub-dimensions of the QoL compared to the CG (p<.05).

Conclusions

The OTP seems to have contributed to maintaining PA levels of both individuals with ID and their mothers during winter period. It is noteworthy that preliminary data was collected in the summer period that COVİD-19 related restrictions were less in Turkey. Beside that, findings showed that intervention programs involving both mothers and their children were effective to have increased the quality of life of mothers.

Keywords: people with intellectual disabilities, mother, physical activity, quality of life

# STUDENTS' PERCEPTION ON WORKING WITH PEOPLE WITH DISABILITY: INFLUENCE OF EXTENSION PROJECTS

Abstract ID: 101

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Aim

A particularity of public Brazilian universities is to offer extension projects (work with the community outside the university) in order to improve undergraduate students' education. These projects, coordinated by a professor from the university, provide a practical moment for the undergraduate students, when they may teach or train people from the community. Thus, this study aimed to analyze undergraduate Physical Education students' perceptions on how easy it is to work with people with disability.

Methods

322 students from public Brazilian universities took part. They were in their last graduation year. They answered a questionnaire and, in this abstract, are the results to the question: in your opinion, what makes it easy to work with people with disability? Among the respondents, 96 took part in extension projects aimed to people with disability, which were dedicated to physical activities and sport disciplines. 226 students did not take part in extension projects. The data was analyzed with the Iramuteq program. The answers were coded in 2 files, separated by participation or not in extension projects. The Reinert method generated a descending hierarchical classification from the term frequency analysis.

Results

The perceptions of the students who did not take part in extension projects generated 3 classes: (1) people with disability as facilitators, through their liveliness and professional appreciation; (2) professional, as a market demand; (3) there is no facilitation, either because of material problems or related to the disability condition. The other group generated 5 classes which focused on the person with disability: (A) intensity, describing their liveliness; (B) dedication, their will to learn; (C) individualization, what they knew about each student and their particularities; (D) physical activity, the desire to be involved with physical activities; (E) non-ease, working with people, regardless of their characteristics, is not easy, it was also easy to work in groups which they had previously worked with, but not with other disability conditions. It was observed that both groups considered people with disability as facilitators for the work with adapted Physical Education, perceiving them as lively people, willing to do physical activities. Conversely, only those who did not take part in projects indicated difficulties related to the material and the limitations of people with disability; those who took part in projects indicated that the difficulty resided in transferring the knowledge from their projects to conditions other than the ones they experienced.

Conclusions

The experience with people with disability showed that it provided different perceptions on working with them. The teaching performance with people with disability is already being used during course subjects to provide this experience to those who choose not to participate in those projects and still requires reflection about its effectiveness.

Keywords: Professional training, People with disability

# FEASIBILITY AND EFFECTIVENESS OF A HOME DELIVERED 6 - WEEK COMBINED TRAINING PROGRAM FOR ADULTS WITH INTELLECTUAL DISABILITY

Abstract ID: 106

Enrico Zanusso [1], Dr. Daniela Schwarz [1], Artur Buchner [1], Elke Langbein [1]

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Aim

As adaptable physical activity programs for adults with intellectual disability (ID) are scarce, this population deals with sedentary lifestyle-related health problems. For our study, we designed a practical home-based testing and training protocol for participants with different levels of ID and physical impairments. Effectiveness was monitored alongside feasibility parameters. The main research questions are whether the intervention I) improved crucial physical parameters, II) increased participants' task-specific independence and III) was well received, suitable and adaptable.

Methods

Twelve adults (mean age: 33.3±8.9; gender: 6 male, 6 female) with different types of ID were recruited. The one-hour intervention was delivered on weekly basis by experienced trainer for six weeks as a combination of functional and resistance training (using innovative dumbbells for the first time with ID subjects), aerobic, balance, proprioceptive, neuromuscular as well as yoga exercises. Anthropometrics were assessed only at baseline. The newly designed, field-based test battery, based upon best available evidence, investigated quantitative changes in strength, balance, flexibility, and functional fitness skills, considering the specific setting and tools available. Moreover, qualitative data about task-independence was collected and translated into quantitative through skill-specific score sheets, based on 'The Project Transition Assessment System'. Furthermore, a perceived competence questionnaire and a feedback survey were circulated. Pre-post statistical analysis was assessed via paired t-tests.

Results

BMI calculation (mean: 28.7±8.9 kg*m-2) indicates that 54.5% of participants are overweight or obese. Participants improved their performance significantly in almost all motoric tasks: functional shoulder rotation +19.5% ($p = 0.005$), shoulder isometric strength +36% ($p = 0.01$), timed up and go test +39 % ($p = 0.02$), sit to stand +16 % ($p = 0.03$) and dynamic balance +18 % ($p = 0.04$). Sit and reach test showed improvements of 65% but not statistically significant ($p = 0.1$). Overall, task-specific independence improved by 35.1%, while perceived competence did not change significantly. Based on the survey, the program was received well by the group. Nine out of twelve participants expressed the desire to continue the intervention, underlining the suitability for the target group.

Discussion

The results of this study suggest that a home-based training, even of short duration, can effectively improve crucial physical parameters and level of independence of adults with ID. Moreover, the success of the tests and training protocol testify the feasibility of such a program without the need of expensive and sophisticated tools. Limitations, such as sample size and lack of control group, are acknowledged and will be considered for further research.

Keywords: Inclusion Adapted Physical Activity Adults With Intellectual Disability

# BEFORE AND DURING COVID-19: PARENT EXPERIENCES, PERCEPTIONS, AND PREFERENCES REGARDING COMMUNITY-BASED PHYSICAL ACTIVITY

Abstract ID: 73

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Aim

Children with intellectual, developmental disabilities or both (IDD) participate in fewer minutes of physical activity (PA) than their peers without a disability. Parents of children with IDD play a critical role in their child's PA participation; furthermore, research indicates that accommodating a child's affinity for recreational activities as well as a family's desire to engage in recreational activities are related to greater child participation. COVID-19 presents additional challenges for the participation in community-based recreational physical activity among families of children with IDD. This study was informed by a conceptual model of the factors affecting the recreation and leisure participation of children with disabilities. The aim of this phenomenological study was to explore and describe the perceptions and experiences of parents of children IDD with regards to community-based recreational physical activities, and further, how their family and child preferences for PA opportunities can be accommodated. The secondary aim of this study was to understand how COVID-19 has impacted family recreation patterns and parent perceptions towards future community-based recreation participation in light of COVID-19.

Methods

Participants were 6 parents (5 mothers, 1 father) from 5 families of children (9 boys, 2 girls) with IDD (Down Syndrome, Autism, Cerebral Palsy, etc.) in Southern Ontario, Canada. Data were collected through online semi-structured interviews via Google Meets. Inductive thematic analysis was conducted to further explore the meaning of parent's experiences in community-based recreation prior to the COVID-19 pandemic and their experiences in community-based recreation during the COVID-19 pandemic.

Results

The interviews revealed four main themes including 1) personal experiences participating in community-based recreation, 2) the barriers and facilitators, 3) the intrinsic value of recreational PA, and 3) how COVID-19 has impacted child and family participation in community-based recreation. Accessible community facilities, accommodations specific to child needs, affordable programming, and human support were all positively associated with participation in community-based recreational PA.

Conclusions

Participation in formal and informal community-based recreational physical activity was described by parents as an essential component of child development and family life. While COVID-19 disrupted typical formal recreation participation for these families and presented with numerous challenges, parental support and child desire for recreational activities resulted in the substitution of formal for informal recreation in the home and outdoors in various community settings.

Keywords: community-based recreation, COVID-19

# REVIEW AND ENHANCEMENT OF A HOME DELIVERED 6-WEEK COMBINED TRAINING PROGRAM FOR ADULTS WITH INTELLECTUAL DISABILITY

Abstract ID: 99

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Aim

Research on exercise-interventions in people with intellectual disability (ID) shows, that exercise is very likely to have beneficial effects on physical- and mental-health parameters in people with ID. Studies in the field often conclude, that further research or follow-up on the topic is needed. One challenge with the follow-up of these studies is, that exercise protocols are often not reproducible, due to the lack of detailed exercise description and applicable field testing. The same applies for the implementation of the research results into practice. This study was created in collaboration with research efforts by E. Zanusso "FEASIBILITY AND EFFECTIVENESS OF A HOME DELIVERED 6 - WEEK COMBINED TRAINING PROGRAM FOR ADULTS WITH INTELLECTUAL DISABILITY". The aim of this study is to carry out the follow-up of the named interventional study directly and therefore fill the gap between research and practical implementation. The present study describes the evidence-based creation of the intervention protocol and also provides a reviewed and enhanced version of the intervention- and testing-protocol, based on the collected data. The enhanced intervention protocol is presented in a way, in which it can be directly implemented into practise and is easy to be adapted and reproduced by third parties.

Methods

For this project, the home delivered 6-week combined training program by Zanusso served as a base. In the training program twelve adults with ID (mean age: 33.3±8.9; gender: 6 ♀, 6 ♂) conducted a 6-week training program in order to improve strength, balance and flexibility. The study collected quantitative data in form of motoric tests and questionnaires, as well as qualitative data collected by the trainer and testing personal. Based on this data, the intervention was reviewed and improved for future implementations. More details on the methods of the intervention study can be found in the abstract by E. Zanusso.

Results

Overall, the quantitative data showed that most of the intervention contents and testing tools were appropriate for the target group and study design. The qualitative observations highlighted some flaws in the exercise program and testing battery. Results from the feedback questionnaire showed a high acceptance of the intervention by the participants.

Discussion

The results of the intervention study let us assume that the original exercise- and testing-protocol was applicable and feasible for the target group. Despite the positive quantitative outcomes, the qualitative feedback showed areas in which the program could be improved. These improvements were actualized in the enhanced exercise- and testing-protocol. In the end, this study yielded an enhanced exercise- and testing-protocol which is based on testing-data and evidence. The protocol can be directly applied into practice or be used for further research by third parties.

Keywords: Intellectual Disability, Exercise, Intervention

# COLLEGE STUDENTS' CHARACTERISTICS ASSOCIATED WITH FAMILIARITY WITH ADAPTED PHYSICAL ACTIVITY TERMS

Abstract ID: 19

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Adapted physical activity (APA) is a cross-disciplinary field of study that encompasses knowledge dedicated to improving physical activity opportunities for individuals with disabilities. The field of APA, which encompasses sub-disciplines such as adapted physical education (APE) and disability sport (DS), is often marginalized and misunderstood by the public. This stems partially from a range of definitions for these terms. Most research examining stakeholders outside those with disabilities are often individuals with direct and regular contact with these groups (e.g., parents of children with disabilities). Little attention has been given to the general public's familiarity and understanding of these fields. This is problematic, given that the public's perception and attitudes towards specific fields are key to the successes and failures of the national policies and initiatives needed for these fields to flourish. Hence, the purpose of this study was to examine what characteristics are associated with college students' familiarity of APA terms.

A survey focused on familiarity and understanding of six terms and organizations connected to the field of APA was delivered to 995 college students from the United States of America (APE, APE, DS, Therapeutic Recreation [TR], Paralympics [PL], & Special Olympics [SO]). This survey asked students to rank their familiarity of these terms and associations on a five-point scale. Spearmen ordinal correlation analyses were conducted between participants' familiarity with terms, demographics, perceptions of the importance of physical activity, and perceptions towards individuals with disabilities. Multiple linear regression analyses were also used with significantly correlated variables to identify predictors that influence participants' familiarity with APA terms.

Results demonstrated that four demographic variables (i.e., age, having a friend/family member with a disability, gender, and race) were significant predictors for familiarity with at least one APA term ($p < .05$). Perceptions towards individuals with disabilities were significantly correlated with each of the six terms ($p < .05$). In addition, perceptions of the importance of physical activity were significantly correlated ($p < .05$) with all but two terms (i.e., PL, & TR). Regression analyses further revealed several predictors for familiarity of APA terms. When examined together, perceptions of disability, but not importance of physical activity, were predictive of higher familiarity scores for all six terms ($p < .05$).

These findings demonstrate that having close contact and positive perceptions towards individuals with disabilities leads one to be more aware of APA related terminology. National organizations representing APA and its' sub-disciplines should use these results to inform more concerted efforts to make the public more aware of these areas.

Keywords: Public Opinion, Awareness, Knowledge Translation, Adapted Physical Education, Disability Sports

# Parallel session 6

# NARRATIVES ABOUT SPORT PARTICIPATION AND BELONGING: SPECIAL OLYMPIC ATHLETES' STORIES

Abstract ID: 84

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Aim

Organized sport participation (OSP) has been associated with a sense of belonging and community engagement for young adults (YA) with intellectual and developmental disabilities (IDD). The complex nature of belonging (i.e., how belonging is experienced) and the pathways to belonging (how it is achieved or not) through OSP, from the perspectives of young adults with IDD, remain unexamined. Understanding how belonging is experienced and how it happens, within OSP, from the perspectives of YA with IDD, can inform sport-related policy, program design, and research. Accordingly, this collaborative narrative study aims to examine how, and through what pathways, YA with IDD experience belonging (or not) through OSP.

Methods

Our research, a collaborative partnership with Special Olympics Ontario (in Canada), employed an inclusive research approach. Specifically, we incorporated accessible methods and materials designed to support active participation of three YA with IDD on the research team, and to encourage and facilitate YA research participants to express their perspectives and experiences. We conducted online narrative interviews with 20 athletes (18-35 years, 10 women) with IDD participating in Special Olympics in Ontario. Interviews focused on athletes' experiences of belonging (or not) through OSP and in other community environments outside of sport. The research team created narrative summaries of each athlete's interview and then used thematic analysis to reveal cross-cutting themes in the narrative summaries.

Results

Athletes reported feeling different from other teammates before Special Olympics, which made it hard to feel a sense of belonging. Some athletes mentioned specific instances of being bullied in sport by athletes without disabilities, or not feeling accepted by their coach, while others reported forging strong athlete-coach relationships. Though most athletes felt nervous when joining Special Olympics, other athletes and coaches welcomed them. Being an athlete was an important role, but most athletes said Special Olympics was more than just about sports – it also facilitated belonging. Contrarily, some athletes expressed not feeling welcome on initial Special Olympics teams. It took these athletes some time to find what sport was the best fit (i.e., where they felt like they belonged). Athletes expressed future goals in Special Olympics, such as moving to another level of play or moving into other sporting roles, such as coaching or leadership. Outside Special Olympics, athletes expressed a spectrum of goals: finishing school, getting a job, living independently, and continuing involvement in sport.

Discussion/Conclusions

Results highlight how athletes experience belonging (on not) and key belonging pathways identified. We discuss how they can inform: (1) policy development and program design for OSP to promote and support a sense of belonging for YA with IDD, and (2) future research on belonging in OSP.

Keywords: belonging, disability sport, inclusive research

# FACTORS RELATED TO PHYSICAL ACTIVITY IN ADOLESCENTS WITH CEREBRAL PALSY: A MULTI-LEVEL APPROACH

Abstract ID: 169

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Aim

Cerebral palsy (CP) is a set of developmental alterations, which generate an impact on the physical condition for health. In Colombia, there is a lack of studies available due to the absence of characterization of this population. The identification of physical, social and cultural variables are very important for intervening early in different issues related to health risks of this population. Therefore, the aim of this study is to determine the factors that influence the performance of physical activity (PA) for this population with CP.

Methods

Participants were 22 adolescents with CP, 10 to 17 years of age, from the city of Bogota. A multilevel approach with mixed method research study based on the social determinants of health were carried out utilizing narrative and descriptive transversal methodology for the identification of factors related to health risks. Participants' physical condition for health was assessed using the Brockport Physical Fitness Test (BPFT). All quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS) tool. For the qualitative data, semi-structured interviews were developed for parents, teachers and public entities related to PA and CP. This data were analyzed using the Atlas.ti 8 -program for the categorical crossing of information, and identification of facilitating factors and barriers to the participation.

Results

Obstacles to participation were identified: personal, social and contextual factors; ignorance of the concepts of CP; physical activity; adapted physical activity. Other obstacles were: limitations as untrained professionals; lack of support networks; poor communication with district entities; lack of access to public services targeted at people with disabilities; poor accessibility and adaptation to the environment; poor access to health services. In relation to physical condition for health, thanks to the categorical crossing of information, it was found that the periodic participation in recreational sports activities, minimum of three times a week, allows the improvement of health. This shows that the studied CP population is located in "Adapted Health Zones" of the BPFT. Finally, the PA is directly related to the processes of participation and independence.

Conclusions

It is necessary to include disability-related topics in university training programs. Moreover, access to support networks such as "Family-School" ensures a better participation in PA and APA, as fundamental tools for better physical condition for health, better functional elements and independence necessary for the population with CP. Greater community participation is required for the restructuring and compliance of public policies, as well as the recognition of the plans and strategies offered by the district entities.

Keywords: Physical activity, Cerebral palsy, Physical condition for health, Multilevel approach

# "LIFE IS TEAM PLAY" – SOCIAL INCLUSION OF PEOPLE WITH INTELLECTUAL DISABILITIES IN THE CONTEXT OF SPECIAL OLYMPICS

Abstract ID: 98

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Aim

The inclusion of people with disabilities in sports has become an international issue with increasing numbers of UN member states ratifying the Convention on the Rights of Persons with Disabilities (CRPD) (UN 2006). Many studies have demonstrated that efforts to promote the inclusion and participation of people with intellectual disabilities (ID) in leisure activities have been justified by the positive outcomes achieved, notably greater functional independence, positive attitudes in the community and creating a sense of belonging (Merrells et al. 2017). Th specific aims of this study were: (1) to understand the meanings of social inclusion to SO athletes in Finland, and (2) to identify the athletes' perceptions of SO as a means of enhancing their social inclusion in sport and wider society.

Methods

Data were transcripts of five focus group interviews carried out with a total of 31 participants (22 men, 9 women; mean age 30, range 15–64 years) during the SO World Winter Games 2017. The content was analyzed using both deductive and inductive coding with the aim of identifying the main themes in the athletes' conversations about social inclusion. The use of focus group interview was chosen as it is considered suitable for gathering qualitative data on participants' perspectives and feelings.

Results

Three main themes were identified in the athletes' experiences and perceptions of social inclusion. First, the athletes looked at inclusion through their past experiences, contrasting it to discrimination. Second, they talked about assistance as a prerequisite of inclusion in two ways: they were both receivers and providers of assistance. Third, participation in teamwork was an expression of being included.

Conclusions

The results show that SO and arguably sport more generally can assist people with ID in moving forward on a path from being excluded toward social inclusion. Our findings highlight the importance of an appropriate social context for efforts to increase the social inclusion of people with ID. The results confirmed earlier findings, that participating in sports among disabled peers can serve as an arena where it is possible to experience inclusion. Our results indicate that it seems important to offer alternative social arenas like the activities and events organized by SO. These sporting arenas enable people with ID to experience equality and a sense of belonging and also to be able to take responsible roles in the collective activity.

Reference

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Keywords: Special Olympics, Social Inclusion, Intellectual Disabilities

# DEVELOPMENT OF AN OBSERVATIONAL SCALE TO ASSESS MOTOR COORDINATION IN PARA-FOOTBALLERS WITH CEREBRAL PALSY

Abstract ID: 121

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Aim

Cerebral palsy (CP) football is a team para-sport for ambulant para-athletes with eligible impairments of hypertonia, athetosis, or ataxia. Coordination performance of para-footballers with CP has had a growing interest in the field of classification, especially for eligibility purposes. However, there is scarce literature focused on understanding motor control to achieve such performance, and its relationship according to CP functional profiles. This study aims to develop a descriptive observation-based scale to assess impaired coordination in CP footballers when executing a tapping test with the lower limbs.

Methods

Forty-one international para-footballers from 13 national teams, competitors of the 2019 IFCPF World Championship in Spain, took part in this study. The participants were classified according to their CP profile: bilateral spasticity (n = 14), ataxia (n = 5), athetosis (n = 11), and unilateral spasticity (n = 11). To assess motor coordination, the participants performed two attempts of the rapid heel-toe test with the more affected and less affected legs. This test consisted in performing 25 rapid dorsi- and plantar-flexions when contacting a 5-cm radius target. The para-footballers performance was video-recorded for further observational analyses. Two independent researchers with experience in CP football classification analysed the videos and registered the most impaired observed features throughout an ad-hoc data collection instrument.

Results

An observation-based tool was developed from the video-recorded analyses, which are composed of five relevant motor features (i.e., impaired coordination) identified when executing the rapid heel-toe test: i.e., range of movement, tapping accuracy, compensatory strategies, temporal features and characteristics of the movements. All these categories presented in the assessment scale showed specific characteristics of the CP profiles (i.e., bilateral spasticity, ataxia, athetosis, and unilateral spasticity) and a ratio-scaled system according to the degree of motor compromise.

Conclusions

The observation scale that has been proposed provides useful information about how ambulant para-athletes with CP perform the movements required in the rapid heel-toe test, considering each impairment and its functional profile characteristics. The development of this type of observation tools would help classifiers for identifying eligibility and supporting their decision-making for sport classes allocation, especially in those with coordination impairments.

Keywords: physical assessment, para-sport, disability

# SPECIAL OLYMPICS: ATHLETES' EXPERIENCES AND PARTICIPATION MOTIVES

Abstract ID: 107

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## Aim

Previous research relating to the Special Olympics (SO) has mainly focused on the parents' and coaches' perspectives while only few studies have concentrated on the athlete's views of participating in sport. In order to fill this gap, this qualitative study examined sport participation experiences and motives of five SO athletes from a special school based in the metropolitan area of Frankfurt / Main (Germany).

## Methods

The study used a qualitative research design. Participants included five male athletes with multiple disabilities between 15 and 19 years of age. This group participated several times from 2012 to 2016 in the German national games in one single sport (Judo). The same group of athletes was interviewed in 2016 after their final participation in the games. First, a rating scale (1-10) was used so that participants could assign a value to selected key motives of participating in the SO (Shapiro, 2003). Second, semi-structured interviews were conducted with the intention of developing understandings of the athletes' experiences and participation motives. Questions used during the interviews were derived from questionnaires used in previous studies researching the motives of athletes' participation in the SO (Everett et al., 2019). Data were analysed through content analysis.

## Results and Discussion

The results from participant data indicate that the participation in the SO over a four-year period seems to have a positive impact on the athletes' self-concept. In line with previous findings, the athletes mainly highlighted the changes in their perceived physical competence and social acceptance (Weiss & Bebko, 2008). Moreover, the athletes participated to win medals, to get to know friends and have fun. These findings are supported by previous studies in this field, that identified social relations and emotional aspects as important motives for athletes with intellectual disabilities to continue their participation in sport (Shapiro, 2003).

Results of this study support the need for evolving training practices in collaboration with sport clubs, as athletes were asking for more frequent training sessions.

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Keywords: Special Olympics, Sports, Judo, Qualitative Research

# INCLUSION OF ATHLETES WITH DISABILITIES THROUGH ORGANISATIONAL CHANGE: -A CASE STUDY OF THE SWEDISH FLOORBALL FEDERATION

Abstract ID: 81

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Aim

The Swedish Sports Confederation is performing a large organisational change. This involves closing the Parasport Federation, one of their 73 national sports organisations (NSO) which today sponsors 14 sports for athletes with disabilities. These athletes will be included in other NSOs offering the same or similar sports, mainly for athletes without disabilities. This ongoing project follows this change within one of the NSOs, the Swedish Floorball Federation (SFF). The project investigates on individual and organisational levels the knowledge of, preparedness for, and experienced opportunities and obstacles to a process of change toward equal conditions for the participation of athletes with disabilities.

Methods

Both quantitative and qualitative data collection methods have been used. Questionnaires were sent to the board and administrative staff of the SFF as well as to administrative staff in the 21 district associations with a total of 55 responses. Semi-structured interviews were conducted among 35 chosen stakeholders within the board and staff of the federation, chairpersons of the districts and representatives from five clubs with floorball for people with and without disabilities. In these clubs, 15 additional interviews were carried out among athletes with and without disabilities and their relatives.

Results

Preliminary results from questionnaires indicate that there is a lack of knowledge regarding the process among some key stakeholders within SFF. For example, only about one third of the respondents at federation and district level claim to know enough about the process to be able to tell another person about it. The results from the interviews also indicate a concern, mainly among stakeholders, that the needs of athletes with disabilities might not become a priority in the same way as it is today in the Parasport Federation, with specific knowledge and experience in disability sports. However, based on the interviews, the general opinion seems to be that athletes with disabilities will gain a deeper sense of belonging by joining the same federation and club as athletes without disabilities, who in return will gain an understanding of disability sports and their athletes.

Conclusions

Overall, there is a clear will to develop disability sports within the SFF. However, for reaching equal conditions an obstacle that must be dealt with in the further process is the risk that athletes with disabilities will become less of a priority. Furthermore, there seems to be a lack of knowledge and preparedness for the change on some key levels, and this calls for communicative strategies about what should be achieved through the organisational change. With a successful change, there is an opportunity for understanding about people with disabilities to spread outside the sports context and thus create awareness in a wider sense.

Keywords: Equal conditions, Inclusion, Disability sport, Floorball, Parasport

# BALANCE ASSESSMENT IN CHILDREN WITH DOWN SYNDROME WHO PRATICE DANCE

Abstract ID: 127

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Introduction

Problems in balance can cause difficulties in the execution of motor skills, which is why it is important that interventions with children with DS consider the development of different motor skills and balance (Malak, Kostiukow, Krawczyk-Wasielewska, Mojs & Samborski, 2015). Therefore, the need for physical exercise, training the unlimited motor experience is considered, so that there is an improvement in the balance development of children with DS (Alsakhawi & Elshafey, 2019), Thus, in order to stimulate the development of balance in children with DS, one of the activities that can be used is a dance that provides conditions for their psychomotor, cognitive and emotional development (McGuire, Long, Esbesnsen & Bailes, 2019).

Aim

To evaluate the static and dynamic balance in children with Down Syndrome (DS) enrolled in a Dance Workshop for people with disabilities. Methodology: Balance tests proposed by Oliveira (2009) were used on 14 children with DS aged between 8 and 12 years (mean of 9.36 ± 1.2 years), who have been practicing dance for at least 2 years. A Control Group was formed with 14 children with DS who do not dance with the same age group (average of 9.43 ± 1.09 years).

Results

Although the maximum result of the proposed tests is 12 points and 42.08% of the sample had a result below 5, it is considered relevant the percentage of 57.13% of the participants to have scored 5, 6 or 7. It can be said that dance proved to be an important means of stimulating the development of balance in children with DS, considering the results of the CG that pointed to 42.25% of the sample with a score of 0 and 57.25% with score 4, 3 or 2.

Conclusions

A continuous and systematic practice of dance can provide a considerable development in the balance of children with DS, favoring their insertion and permanence in physical exercise and sports initiation programs.

Keywords: Balance, Dance, Down Syndrome

# COMPARISON OF THE EXTERNAL LOAD BETWEEN MATCHES PLAYED AT SEA-LEVEL AND MODERATE-ALTITUDE IN CEREBRAL PALSY FOOTBALLERS

Abstract ID: 66

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Aim

International football matches played around the world could be staged in moderate-altitude locations where teams face hypoxic conditions that impact physical, technical, or tactical components. These particularities are not exclusive to conventional football and are extended in tournaments for cerebral palsy (CP) football players organized in moderate-altitude sports venues. This study aimed to compare the external match load in official international CP football matches at moderate-altitude and sea-level locations.

Methods

Eighty-seven international CP footballers (25.3 ± 6.4 yr; 172.4 ± 7.6 cm; 65.2 ± 10.6 kg; 21.9 ± 2.9 kg·m-2) participated in this study. This sample was recruited from three tournaments organized by the International Federation of Cerebral Palsy Football (IFCPF), at near sea-level (4–30 m) and in moderate-altitude (2550–2850 m). A total sample of two equal groups with 46 valid observations was obtained from the mentioned competitions, and the player's dataset was categorized into a moderate-altitude group (MAG) and sea-level group (SLG). The match physical response was evaluated using global position system (GPS) devices. The variables used to compare the match physical response between MAG vs. SLG were: total distance (TD) covered, maximum velocity (Velmax) distance covered at different intensities (Low Walking: < 0.4 km·h-1 [LW], Walking: 0.4-3.0 km·h-1 [W], Jogging: 3.0-9.0 km·h-1 [J], Medium Intensity Running: 8.0-13.0 km·h-1 [MIR], High-Intensity Running: 13.0-18.0 km·h-1 [HIR] and Sprinting: > 18.0 km·h-1 [SPR]), and number of moderate (1.00-2.78 m·s-2) or high (> 2.78 m·s-2) accelerations/decelerations.

Results

Significant differences were obtained for all the match physical response variables measured with the GPS devices in the games played by MAG and SLG. There are lower values in players who competed in moderate-altitude than sea-level in the Velmax, TD, J, MIR, HIR, and SPR. Similarly, the SLG performed a higher number of short-term actions in moderate/high accelerations and decelerations than MAG. On the other hand, para-footballers belonging to MAG covered more distance at intensities in LW and W during the matches played in high-altitude.

Conclusions

The main findings of this study suggest that CP footballers who competed under altitude conditions had lower match physical response, represented on total distance covered, distance covered at different intensities, and short-term actions (i.e., accelerations and decelerations) during international CP football matches. The knowledge about CP football matches physical demands at different altitudes in participants competing in regional tournaments allows coaches to prepare specific acclimatization days, permitting players to cope with these requirements and confront the exigent environment conditions. This information could generate training and competition guidelines about para-athletes' performance in different terrestrial altitude sports venues.

Keywords: Para-footballers; Cerebral Palsy; Para-football; Moderate-Altitude

# Friday 18th June 2021

## Parallel session 7

# EQUAL ABILITIES - THE SWEDISH PARASPORT FEDERATION AND THE INCLUSION PROCESS

Abstract ID: 64

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Aim

A major organizational change is currently taking place in Swedish sports, where people with disabilities (PWD) are leaving the Parasport Federation for mainstream sport within the Swedish Sport Confederation. The aim of this study is to map the expectations of the ongoing process among stakeholders within the Swedish Parasport Federation. Central is also to identify any distinction in expectations between the Parasport Athletes (PA) versus stakeholders.

Method

This study is empirically descriptive, based on a questionnaire with 130 respondents connected to the Swedish Parasport Federation. It was analyzed through independent samples t-tests. This contribution is a part of an extensive investigation of the organizational change in the Swedish Sport Confederation regarding sports for disabled.

Results

The results indicate some factors that can enable, or prevent, successful inclusion in sport organizations. For instance, the respondents expect that inclusion can facilitate for people with and without disabilities to perform sport together and act as role models to each other, and the respondents also think that recruitment into sport activities will increase after the organizational change. Although, there are some concerns because a significant number of the respondents fear a worsened economic situation for the PA and some fear lack of accessible facilities and equipment due to the organizational change. The results indicate no large divergence in how the PA and stakeholders view the opportunities and obstacles with inclusion.

Conclusions

To consider, respondents give answers to something that is not yet a reality for them and their expectations need to be seen in the light of the information they have regarding the ongoing organizational change. Consequently, expectations reported in this study do not capture a complete picture of opportunities and obstacles but some concerns are put forward that can impact the success of inclusion in a future sport organization and these should be recognized early in the process.

Keywords: physical activity, Parasport, athletes, sport organization

# DEVELOPMENT AND PRELIMINARY VALIDITY OF A WHEELCHAIR BASKETBALL SKILL PROFICIENCY SCALE

Abstract ID: 143

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Aim

Wheelchair basketball (WB) is one of the most popular Paralympic sport activities. While a variety of field tests are available for assessing training performance, no qualitative assessment tool has been developed thus far for assessing the developmental status of a novice wheelchair basketball player. Such a measure could provide additional information regarding skill proficiency. The aim was to assess the scale's structure and divergent validity across time, and functional classification.

Method

An 18-item, 3-point wheelchair basketball skill proficiency scale (WBSPS) has been developed at the Israel Sport Center for the Disabled, using measurements taken from participants at a sport development program for youth with disabilities. Over a 6-year period, an experienced trainer repeatedly assessed young players using the WBSPS.

Results

Data was analyzed for 45 young WB players (mean age=15.9; SD=3.04; age range=10-22 years; 16 females). Explorative factor analysis revealed a clear unifactorial structure (item loadings = 0.89-0.99). Cronbach alpha reliability was > .99 for each assessment year. ANOVA across participation years revealed significantly higher scores for the fourth and fifth years compared to the first-third years of WB participation. T-tests revealed a trend toward better performance of participants, classified as 3-4.5 points compared to 1-2.5 points ($t[43]= -1.93$, $p=.06$; Cohen's $d=0.6$).

Conclusions

Based on our results, the WBSPS scale appears to have a valid structure that can identify change across participants and time. Further studies should acknowledge the scale's reliability via interrater and intrarater reliability assessments.

Keywords: Youth, Assessment, qualitative, sport games

# INCLUSIVE PHYSICAL ACTIVITY, PHYSICAL EDUCATION AND RECREATION PRACTICES, POLICIES AND STRUCTURES IN TURKEY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT GOALS

Abstract ID: 83

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Aim

Good governance and endeavors regarding inclusive physical activity, physical education and recreation (IPA, IPE, IR) have significant influence in sustaining social welfare; while their absence impose a great burden on states and individuals. We aim to overview the IPA, IPE and IR practices, policies and structures in Turkey in the context of sustainable development (SD) goals.

Methods

Mixed-methods were employed including analysis of the documents, interviews with stakeholders and online surveys. Initial results from the (N:20+) documents' content analysis (approximately 2000 pages, web contents) will be presented. Presentation of the interview (N:20) and survey (150+)results will depend on the decision processes by the relevant parties and completion.

Results and conclusions

Sports' role in SD and the challenges regarding people with disabilities, in poverty, women, youth, elderly, and other vulnerable groups has been stated in UNSD-2030 Agenda or extended guidelines. The need, actions to continue developing policies and practices were emphasized in state documents as in other results. We will exemplify how these issues are addressed, to ease and lead efforts about SD.

Keywords: Deaf, People with Disabilities, Sustainable Development Goals, UNSD 2030 Agenda, Vulnerable Groups, Turkiye

# SYSTEMATIC REVIEW OF DEVICE-BASED MOTION SENSORS FOR MONITORING PHYSICAL ACTIVITY IN COMMUNITY-DWELLING MANUAL WHEELCHAIR USERS

Abstract ID: 152

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Physical activity (PA) levels among community-dwelling people who use manual wheelchairs are typically insufficient for good health and interventions that aim to promote PA participation among this population are needed. To evaluate the efficacy of such interventions, accurate methods for measuring PA in free living environments are required. However the challenge is complex – measures need to be sensitive to the nuanced free living activities completed by manual wheelchair users (MWU) as well as be able to take into account the external factors influencing on the performance such as wheelchair properties and wheeling surfaces– and currently there is no single device or combination of devices that provides direct, comprehensive measure of overall physical activity in this population. Recent studies have indicated that device-based motion sensors can provide an indirect but acceptable estimate of PA levels in community-dwelling MWU.

The aim of this study was to review the evidence of the reliability and validity of the existing device-based motion sensors for estimating four outcomes: energy expenditure (EE); self-propulsion (SP); upper body (UB) activities; and wheelchair movement, time, distance and speed, which provide an indication of PA levels in community-dwelling MWU. Recommendations regarding device-based motion sensor selection for clinicians and researchers are presented.

A total of 29 articles evaluating 26 device-based motion sensors or sensor combinations met inclusion criteria. From all device-based motion sensors, 16 (62%) were custom-made and 10 (38%) were commercially available. Of the12 body-worn devices, those based on 3-axial accelerometers and secured to the upper-arm or wrist provided an acceptable estimate of daily EE and emerging evidence indicates they can differentiate and quantify SP and UB exercising in MWU. However, the usability of these devices is not suitable for long-term monitoring in community-dwelling participants. Of the 8 wheelchair mounted motion sensors evaluated, several provided acceptable estimates of wheelchair movement time, distance and speed, but the devices used were mostly custom made devices and had only been evaluated for continuous linear wheelchair propulsion in laboratory settings or sporting contexts and not for the sort of activities typical of daily wheelchair use.

Despite of the growing interest on field for developing PA measures in people using wheelchairs, there is a lack for population specific commercially available research-based and consumer-based devices for monitoring the variety of different daily activities in community-dwelling people using wheelchairs. More studies focusing on developing and validating PA monitors designed for everyday use among this population are still needed. More attention needs to be paid on customising the algorithms and device settings to suit better for MWU and on methodological quality of the studies validating the devices.

Keywords: Community-dwelling, manual wheelchair, measuring, physical activity

# DISABILITY 'INCLUSION' IN CANADA'S COACH EDUCATION SYSTEM: A CRITICAL REVIEW

Abstract ID: 93

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Aim

High-quality coach education is critical in creating an inclusive coaching workforce. However, coaching researchers have shown that coach education programs often exclude discussion of para-athlete participation, are framed around outdated views of disability, and are built on the assumption that able-bodied coaching principles can be unproblematically applied in parasport contexts. To date, limited research has examined how disability inclusion is enacted in coach education programs.

Methods

To fill this research gap and progress our understanding of coaching in disability sport contexts, this paper will critically examine disability inclusion in the curriculum of a large scale coach education system. To do this, we drew on critical disability studies and Foucault's articulation of power as relational to understand the "enactments of power within specific power relationships" (Peers, 2012a, pp. 298–299).

Results

Overall, our results found that the inclusion of para-athletes in coach education is limited and problematic. In many examples, the discursive construction of para-athletes sees them as only marginal or marginalized participants. For example, in some cases para-athletes were 'tacked on' to pre-existing coach education materials, framed as ethical dilemmas, and visibility was through a mere redirect to other external materials. That said, we will also present some examples of how para-athletes are being reimagined as equal participants in coach education programs. We then provide a critical discussion of the content by illuminating how dominant discourses of disability and the 'parasport coach' have informed and shaped Canada's coach education for parasport.

Conclusion

Based on our results, we will share insights and recommendations on how sport practitioners might develop and deliver coach education systems that can disrupt problematic constructions of para-athletes and coaches in parasport contexts to lead to a more well prepared and inclusive coaching workforce.

Keywords: Inclusion; Parasport; Coach Education; Curriculum; Critical Disability Studies

# EFFECTS OF EIGHT WEEKS OF GOALBALL TRAINING ON REACTION TIME AND ATTENTION PERFORMANCE IN CHILDREN

Abstract ID: 177

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Aim

This study was conducted to reveal the effects of eight-week Goalball training on the reaction time and attention performance in children.

Methods

Seventeen eighth grade students, aged 13-14 years of age, without disability (8 females and 9 males) attending a primary school in Adana voluntarily participated in this study. The students were divided into two groups by random sampling method, 8 students for Goalball Group and 9 students for Control Group. The Goalball Group received goalball training for about 60 minutes a day, 2 days a week for 8 weeks. The Control Group did not participate regularly in any sports activities during the same 8 weeks. Attention performance and reaction time of all students in this study were measured before and after the 8 week period. The D2 Attention Test was used to measure attention performance. The plate-tapping test of the Eurofit Test Battery was used to measure reaction time. In statistical analysis, the normal distribution of the data was examined with the Kolmogorov Smirnov and Shapiro Wilk tests. Because there was no normal distribution of data in the two groups, the Mann-Whitney U test, one of the non-parametric tests, was applied for the group comparisons.

Results

At the beginning of the study, the students' D2 attention performance and the plate-tapping reaction time were measured and compared between the Goalball Group and the Control Group. There was no statistically significant difference between the two groups ($p > 0.05$). After the 8 week period, when the students' D2 attention performance and the plate-tapping reaction time test were measured and compared again, there was no significant difference between the D2 attention test results ($p > 0.05$). However, there was an improvement in favor of the Goalball Group participants in terms of reaction times ($p = 0.004$).

Conclusions

This study demonstrates that eight weeks of goalball training does not affect children's attention performance, but such training improves children’s reaction times. For this reason, we believe that adding goalball exercises to physical education classes can be beneficial for children of this age group.

Keywords: Goalball, attention, child, D2 test, reaction test

# THE PRACTICE OF DISABILITY SPORT IN CHINA: AN INSPECTION BASED ON THE PERSPECTIVE OF POLICY INSTRUMENTS

Abstract ID: 27

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More than 85 million disabled people are an indispensable part of China's social stability and development. Their health and quality of life are some of the factors that affect social stability and harmonious development. In the past half-century, sports for people with disabilities in China have exhibited the essential features of development in the current stage. Among them, binding laws, regulations, and non-binding policies have impacted development profoundly.

The purpose of this study was to examine the development of sports policy for people with disabilities in China and the impact policy has had on practice. Starting with relevant policy texts, with time sequence as the context, and combining relevant major events, this study revealed the value of policy objectives to practical development. The research methods used in this study were textual analysis and experts' structured interview. Textual analysis was primarily focused on document arrangement. This research classified, sorted, and analyzed legal documents and policy guidelines according to binding and non-binding documents issued at the national level from 1949 to 2020.

The experts' structured interview involved collecting the opinions of relevant insiders regarding the impact of policies at the practical level, using the research paradigm of Interpretative Phenomenological Analysis (IPA) to process the information of expert interviews, conduct discussion, and analysis data. As a result, six interviewees were selected to analyze China's sports policy and practice for people with disabilities. The interviewees were managers or professionals of provincial and municipal sports for persons with disabilities who have worked in the field of sports for persons with disabilities for more than 30 years.

Results discuss the evolution of policy texts in time series, the characteristics of policies in terms of quantity, content, and subjects, the relationship between the background of policy promulgation in different stages and event orientation, and factors affecting the evolution of policy changes. The results of this research can provide a valuable reference for the choice of policy instruments in the future.

Keywords: China, disability sports, policy perspectives

# RELIABILITY OF A NEW AEROBIC FITNESS TEST PROTOCOL ON A WHEELCHAIR ERGOMETER FOR WHEELCHAIR RUGBY PLAYERS - A PILOT STUDY

Abstract ID: 221

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Aim

Aerobic fitness is an important part of sport training preparation for wheelchair rugby players. Currently, there are some test protocols on arm crank ergometer for spinal cord injury people. However, wheelchair propulsion seems to be better and more specific movement to assess aerobic fitness in wheelchair rugby players. Thus, this pilot study was designed to determine the reliability of the aerobic fitness test protocol on a wheelchair ergometer for wheelchair rugby players.

Methods

Ten wheelchair rugby players (C5/6 = 4, C6/C7 = 3, C7/th1 = 1 all with incomplete lesions, CP = 1; dismelia = 1; mean age = 32,90 yr. ± 5,17; body mass = 70,04 kg ± 12,53; body heigh = 177,70 cm ± 18,64) participated in the aerobic fitness test on the LODE Esseda wheelchair ergometer (LEM Software 10.12, Groningen, Netherlands). This test involved different considering players' IWRF class (class 0.5 = 4N, classes 1.0-1.5 = 6N, and classes 2.0-3.5 = 8N) increments of workload every minute at constant speed of 4.5 km/h. Oxygen uptake ($\dot{V}O2$), minute ventilation (VE), and the test time achieved were collected by Cortex Metamax 3B. All pulmonary parameters from the last 15 seconds of the last fully load level of the test were taken to statistical analysis. Participants repeated the aerobic fitness test twice with 24h break. Each player had 10 minutes warm-up before the test. Differences (T-test for independent groups or Wilcoxon test) and correlations (Pearson test or Spearman test) between results from the first and the second repetition of the test (fully achieved load level in the test) were calculated to establish reliability. The intra-class correlation coefficients (ICC) and standard error of measurement (SEM) were added. The significance level was set at $p<.05$

Results

There were no statistically significant differences in all observed parameters: $\dot{V}O2$, VE, the test time achieved, and the load between attempts in the aerobic fitness test on the LODE Esseda wheelchair ergometer ($p>0.05$). There were high correlations between parameters in both attempts of the test ($r>0.80$, $ICC>0.96$).

Conclusions

This pilot study shows no differences and high correlation between observed parameters in both attempts of the aerobic fitness test on the LODE Esseda wheelchair ergometer. This result indicates that the new aerobic protocol on wheelchair ergometers is reliable. Thus, we recommend performing a wheelchair propulsion test for aerobic fitness testing for wheelchair rugby players, however more research is needed in this research field.

Keywords: wheelchair rugby, adapted sport, paralympic sport, aerobic, physical fitness

# Parallel session 8

# EXPLORING PARASPORT COACHES' ROLES IN ATHLETE CLASSIFICATION

Abstract ID: 11

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Aim

Classification is an essential component of parasport. Through the grouping of athletes with similar levels of functional ability, classification seeks to ensure fair and just sporting competition for all athletes. Undergoing classification is a difficult experience for some athletes, however, coaches are a prominent source of support for athletes during this event. While support persons may moderate athletes' experiences, research has yet to examine the specific roles of coaches during classification. Therefore, the purpose of this study was to explore the role of parasport coaches during athlete classification. As a secondary purpose, this study examined coach learning and ideal resources related to classification.

Methods

Twelve Canadian high-performance parasport coaches representing eight different parasports participated in semi-structured interviews regarding their role in classification. Each participant had coached at least six athletes during their international classifications and their coaching experience ranged from four to 42 years (M = 19.30, SD = 11.62 years). All interviews were conducted via the video-conferencing software Zoom and transcribed verbatim following their completion. On average, interviews lasted approximately 40 minutes. An interpretivist paradigm was adopted for this study and an inductive reflexive thematic analysis was conducted to interpret the results. This analysis involved an iterative process of reading transcripts, writing and refining codes, and reviewing our interpretation of the themes while remaining cognisant of our assumptions and their potential impact on our analysis.

Results

Thematic analysis of interview transcripts showed three themes: the coach's role as intuitive, coach learning as informal, and the importance of classifier experience. Furthermore, findings suggest that parasport coaches' main roles in athlete classification are to prepare the athlete, ensure fairness during classification, and reframe classification as less important than sport training.

Conclusions

This study advances our understanding of parasport coaches' roles during athlete classification. Practically, the need for coach-specific classification resources and the importance of comprehensive and concise educational materials were highlighted. Future research may consider focusing on athletes' perspectives of coaches' roles in classification, as well as coaches' strategies for emotional regulation.

Keywords: parasport, disability, social support, coaching, sport psychology

# ANALYZING DISABILITY SPORT POLICY IN FINLAND - CURRENT STATE AND FUTURE PERCEPTIONS

Abstract ID: 140

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Aim

This study will provide an in-depth view of the disability sports policy in the Finnish landscape. The focus is on those main policy practices, which have promoted disability sport in Finland, i.e., the structural changes of disability sport organizations and inclusion processes of different specific sports. The data consist of evaluation reports (n=3), archival material (n=3) and disability sport organizations own memos (n=2).

Results

Disability sports and adapted physical activities have traditionally been organized only in separate settings and based on diagnoses and disability. At the early stage, persons with disabilities were not able to participate in mainstream sports services due to inaccessible facilities, lack of knowledge or negative attitudes. Segregation was justified by (re)habitational goals, peer support and empowerment. Persons with disabilities started to organize their own events and competitions such as the Paralympics, Special Olympics, Transplant Sports and Deaf Sports. This was the only way to get an opportunity to participate in sports or have fair competition. However, there has been a shift from the special and segregated sport towards the mainstream one. Most elite athletes with a disability are already members in their sport-specific sports clubs and federations, and most disability sports are organized by their sport-specific federations. The level and broadness of this development varies, and the process towards inclusion is still ongoing. Despite of the structural changes and the unification process of disability sport organizations, there is still a wide range of actors funding and implementing disability sport policy. The Ministry of Education and Culture, which funds national sport policies, is the largest public organization. Public and third sector organizations create policies and programs, which are then implemented together with several sports organizations and municipalities at different levels from local to national.

Discussion

The autonomy of actors and the mixed overall sport system have been both barriers and facilitators of Finnish disability sports development. The state as a main responsible agent of Finnish sport policy and financing has been a good ‘back rest’ for disability sport: negotiations are organized only between state and disability sports organizations without other intermediate actors. This has increased the trust between single actors in the disability sport system and the state. The state can act as a strong source of the legitimation of inclusion processes. Accordingly, the autonomy and independence of actors can be a barrier to achieving common goals and acting together. To maintain the balance between single interests and national disability sport policy, more attention should be focused on common goal setting and composing mutually shared policy actions.

Keywords: disability sport, sport policy, inclusion, structure, organization

# APPLICATION OF SPORTS SCIENCE METHODS TO CLINICAL SETTINGS

Abstract ID: 158

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## Aim

Today training planning of patients like Cancer Survivors sometimes includes intensities with calculated maximum heart rates ($HR_{max}$) like 220-age (1) or thresholds (TH) at e.g. 4 $mmol \cdot l^{-1}$(2). These parameters are means from studies with healthy volunteers. Therefore, they cannot predict the individual´s real values. Further, those thresholds are influenced by e.g. nutritional status (3) and probably medications. Control of training by means of generalized parameters should be critically questioned.

## Methods

We present data from healthy athletes based on Aerobic Capacity from Incremental Tests (IT). In addition to 4 $mmol \cdot l^{-1}$, 7 often used THs (5 lactate and 3 respiratory) were included (4). These THs were also applied to the results of Endurance Capacity Tests (ECT). To compare measured $HR_{max}$ with calculated $HR_{max}$, the same study was used (n=24).

## Results

7 of 8 THs (except VT1) correlate with each other, $P_{max}$, $_{rel}P_{max}$, $VO_{2peak}$ and $_{rel}VO_{2peak}$ ($p<0.05$), but none of these parameters predicts duration in ECT with 80% of $P_{max}$ ($p>0.05$). Calculated HRmax from 220-age range "only" by 4.0 $b \cdot min^{-1}$± 9.2 from measured $HR_{max}$ in IT (Tab.2). In individual´s, however, the difference can be up to +17/-14 (220-age) and +10/-16 (208-0.7·age).

## Discussion

The data show that formulas cannot reflect individual physical conditions precisely even in healthy subjects. Therefore, they cannot be used without critical reflection for people with or after severe diseases. Endurance includes

## Conclusion

Instead of calculations – which already show glaring deviations from measured values in healthy subjects and suggest safety – individuals should rather be the focus of consideration. Perceived exertion (5) or conversations during training can also provide information on level of burden. Training content should be individually adapted and everyday Physical Activity as a “therapeutic tool” should become more important.

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Keywords: Calculated $HR_{max}$, Lactate thresholds, Cancer, Physical Activity, Training

# FACILITATORS AND HINDRANCES OF INCLUSION IN SPORTS CLUBS

Abstract ID: 126

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It has been estimated that approximately 1,000-1500 mainstream sports clubs organise activities for persons with disabilities, which represents 10-15% of the total number of Finnish sports club. The purpose of this paper is to present results of a sport clubs survey (Saari, 2021) which was conducted by the Finnish Paralympic Committee in September-October 2020 in co-operation with the Finnish Society of Sport Sciences.

The target of the survey was to find out the current situation of programmes and services for persons with disabilities at the local level, as well as the problems and support needs of local sports clubs. There is no official registry nor e-mail lists of Finnish sports clubs. The sports clubs survey was spread via email and social media with help of National Sports Federations adapted physical activity networks. The respondents (n= 334) represent 314 sports clubs or associations. 66% of them organise adaptive sports or disabled sports or have people with disabilities involved in their activities. Activities are organised in specific, targeted groups and in general (open-to-all) groups and recreational environments. Only 10% of sports clubs have persons with disabilities as instructors, coaches or volunteers.

In clubs and associations that organise activities, the participation of people with disabilities is seen as important and as a social duty of the club. The clubs need the most support in finding instructors, volunteers, target groups and sponsors, as well as in matters related to facilities. In clubs and associations that do not yet have persons with disabilities, the greatest need is in education and training and special know-how of disability. The advancement of inclusion requires measures at both the local and national levels. Clubs need to take steps to actively remove barriers to persons with disabilities joining in. Municipalities can accelerate their activities by directing their subsidies to non-discriminatory clubs. It is recommended that sports organisations review their equality programmes from the perspective of the UN Convention on the Rights of Persons with Disabilities (CRPD). Equal opportunities for persons with disabilities to participate in general activities must be the starting point for developing adaptive activities.

Reference:

Liikuttaako? [To move?] A report for the survey on physical activity for persons with a disability and the related survey conducted with sports clubs. Aija Saari (ed.) and Timo Ala-Vähälä, Finnish Paralympic Committee 2021.

Keywords: inclusion, persons with disabilities, sports clubs, adapted physical activity, disability sport

# "MY PERSPECTIVE HAS CHANGED ON AN ENTIRE GROUP OF PEOPLE": UNDERGRADUATE STUDENTS' EXPERIENCES WITH THE PARALYMPIC SKILL LAB

Abstract ID: 12

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Aim

The purpose of this study was to seek to understand and describe the experiences of university students taking part in the Paralympic Skill Lab (PSL) program in relation to shaping attitudes and perceptions of disability and disability sport.

Methods

The researchers adopted an interpretivist ontology, where we attempted to make sense of our participants' interpretations of their lived experiences in the PSL. Data from 35 students were collected via focus group interviews and reflective essays, and analyzed inductively using a three-step approach.

Results

The analysis revealed three interrelated themes: (a) "My mindset definitely changed": The power of contact, (b) "This moved me so much to be the change": A call to action, and (c) "They can shine as much as normal athletes": Societal standards of ableism. The first theme centered on the participants changed perspectives as a result of participating in PSL and having direct contact with athletes with disabilities. Participants resoundingly expressed, through their words and writing, the manner in which the PSL experience shifted the paradigm through which they view disability and disability sport. Building on perception changes explicated in the first theme, the second theme centers on the call to action that participants shared through their words and writing. This theme approaches a call to action as offering tangible, actionable intentions and plans that move beyond the a-ha moments that are highlighted as a result of disability sport and Paralympic education. Despite perception changes and calls to action highlighted in the first two themes, concerns were still evident in the participants' perspectives. The final theme depicts the ableist paradigm through which the participants ascribed meaning to their experience, showcasing an idealized notion of normal through words and writing. Terms and phrases such as "normal" and "just like we are" draw attention to an ableist mindset, even when offered unknowingly or in a well-intentioned manner.

Conclusions

These findings provide support for the assertion that participation in contact-based disability sport education and awareness programs can enhance participant knowledge, attitudes, and perspectives toward persons with disabilities. However, improvements to the program may be necessary to help de-center the use of deficit-based ableist language among college-aged students.

Keywords: attitudes, inclusion, equality, disability sport education

# MOBILE EXERGAMES FOR CHILDREN WITH LIMITED MOBILITY

Abstract ID: 54

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Aim

Mobile exergames can encourage children to engage in physical activity, but may not work for individuals with limited mobility. For example, Pokemon Go puts a high demand on dexterity when manipulating the screen in game play, and also requires making long walks to unlock achievements. The goal of this project was to develop an exergame that was motivating, fun, inclusive and possible to personalise to individual motor or dexterity preferences.

Methods

The project method was human-centred design, working iteratively with the users and with a multidisciplinary team with experts in programming, physiotherapy, co-design, sound and game design and end-user organisations. Several sketches of games were developed in the process, which were later focused to one location-based game (played outside) and two AR-games that could be played anywhere. Due to COVID-19 restrictions, both iterative and final evaluations when end users tried out the games were limited and could not be observed in person. In the final evaluation, 1 child, 3 youths (13-17 yrs) and 4 adults with CP tested the games on their own for a shorter period of time (about 1h) and sent feedback based on a rating sheet and a few questions. The games were also evaluated against guidelines for accessible games and compared to a set of 6 exergames for children of different types.

Results

The two AR-games were later wrapped in a game environment with a story and character evolvement, but the location-based game remains a separate prototype. The AR-games encourage smaller movements, like stretching arms, rising up and walking short distances and it is possible to choose from a variety of difficulty levels. The location game encourages moving longer distances (from 10 m and upwards), and by choosing an appropriate game spot (e.g. a paved school yard or unstructured nature) it has many possibilities for tailoring the difficulty level. The test users rated the AR games as easy to very easy to understand and on average judged them between appropriate and somewhat too easy to play. The games scored better on accessibility guidelines than the reference games by 25%, mainly due to having flexible difficulty ratings and less reliance on fine motor skills.

Conclusions

The aim was to make an inclusive, accessible and motivating game. This aim was partially met and partially tested. Pre-finished versions of prototypes were tested for a shorter time, and questions were focused on user experience and personalization. It was also difficult to judge if the appropriate difficulty setting was used during the test sessions. In addition, games were targeted to younger children, which we were not able to recruit to the final tests. Further testing would thus be needed to assess the inclusiveness and to test with the appropriate target group and appropriate difficulty levels.

Keywords: inclusion, exercise, exergames, location-based games, AR games, mobile AR

# SITTING VOLLEYBALL AND COVID-19 PANDEMIC EXPERIENCES: ADMINSTRATORS, COACHES, AND ATHLETES

Abstract ID: 114

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Aim

Rapid decisions to postpone the 2020 Paralympics were based on the spread of COVID-19. Little is known about the impact of the pandemic on paralympic sports during the early phases of it. One of the most popular parasports is sitting volleyball. The aim of this study was to examine how sitting volleyball athletes, coaches, and administrators were affected by COVID-19 pandemic in a socio-historical process.

Methods

Two coaches and two athletes and one administrator (n=5) from Brazilian and Iranian national teams were invited and consented to take part in online interviews to describe the events between January through to April 2020. Semi-structured interviews took place in either Portuguese or Persian. The data were then analysed with a socio-historical process to review and report the accounts over time. Commonalities between interviewees were reported by content analysis. The interviewers were known to the interviewers but does not work with them directly in any other way than to carry out the interview.

Results

January-February: Both teams had qualified for the 2020 Paralympic games and were expected to compete in the World Cup. However, in January, the World Cup was moved to another city, and was then cancelled. The coaches expressed concerns about the transfer of the World cup to relocated venues, and stayed focus on the Paralympics with training as usual. The athletes remained highly focused in their preparations. March: The Paralympic Games were officially postponed and lead to much uncertainty to athletes, particularly for older athletes who were unclear if an extra year was within their career plan. Reducing the training levels, lack of training facilities, financial distress, and alienation from teammates all contributed to negative mental health effects as well. April: Athletes and coaches found new ways to train together to make the most of a bad situation. Athletes reported less training than normal although access to digital technology helped to stay physically active. The lack of physical bonding with teammates led to question their para-athlete identity and even provoked questions of retirement. More events were cancelled reducing opportunities to gain competition experience for administrators, athletes and coaches.

Conclusions

This approach to understanding the effects of COVID-19 in the early stages of the pandemic can be useful maintain sport management, athlete well-being, and use of technology for coaching. The athletes and coaches experienced for the first time, a break from the normal routines. During the early phases, athletes and coaches experimented with ways to maintain fitness during the quick shutdown. It was evident psychological support was and still is needed to maintain focus for a tournament more than a year away. COVID-19 had limited the growth and development of parasports, with administrators, athletes and coaches needing a clear action plan for going forward out from the pandemic.

Keywords: Paralympic, Pandemic, Sitting Volleyball

# A MOBILE APPLICATION TO PROMOTE A HEALTHY LIFESTYLE IN WHEELCHAIR USERS WITH SPINAL CORD INJURY OR LOWER LIMB AMPUTATION: A USABILITY AND FEASIBILITY STUDY

Abstract ID: 30

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Aim

Maintaining a healthy lifestyle is important for wheelchair users' wellbeing, as it can have a major impact on their daily functioning. Mobile health (mHealth) applications can support a healthy lifestyle, however, are not suitable for wheelchair users with spinal cord injury (SCI) or lower limb amputation (LLA). Therefore, a new mHealth application (called WHEELS) was developed, to promote a healthy lifestyle. The aim of this paper was to describe the development of the WHEELS mHealth application and explore its usability, feasibility and effectiveness.

Methods

The WHEELS application was developed using the intervention mapping framework. Intervention goals were determined based on a needs assessment, after which behaviour change strategies were selected to achieve these goals. These were applied in an application which was pre-tested on ease of use and satisfaction, followed by minor adjustments. Subsequently, a 12-week pilot study was performed to explore usability, feasibility and effectiveness of the application. Wheelchair users with chronic SCI or LLA with access to a smartphone were invited to participate. The System Usability Score (SUS) and Usefulness, Satisfaction, and Ease (USE) questionnaires were administered to investigate usability and feasibility. Effectiveness was determined by measuring changes over time and determine effect sizes (ES) on physical activity, nutrition, sleep quality (Pittsburgh Sleep Quality Index (PSQI)), body composition and other secondary outcomes, pre and post intervention. Paired sample t-tests or Wilcoxon signed-rank tests (non-parametric alternative) and Hedge's g effect sizes were determined.

Results

Sixteen behaviour change strategies were built into an app to change the physical activity, dietary, sleep and relaxation behaviour of wheelchair users. Of the 21 participants included in the pilot study, 14 participants completed the study (9 females, mean age 54.7±11.3 years; 11 SCI). The interviews and questionnaires showed a varied user experience. Participants scored 58.6 ± 25.2 on the SUS questionnaire and 5.4 ± 3.1 on ease of use, 5.2 ± 3.1 on satisfaction and 5.9 ± 3.7 on ease of learning. There were reductions in body composition were found on waist circumference (-2.5±3.2 cm; P = .015; ES = .76), fat mass percentage (-5.8%± 5.8; P = .004; ES = .97) and fat free mass percentage (5.8%±5.8; P = .004; ES = .97). Positive trends were found in body mass (-1.4 ± 2.7; P = .091; ES = .49), body mass index (-0.5 ± 1.0; P = .073; ES = .53), daily grams of fat consumed (-13gr ± 19.9; P = .074; ES = .56) and sleep quality score (-1.3 ± 2.2; P = .063; ES = .57).

Conclusions

The WHEELS mHealth application was successfully developed. The interview outcomes and usability scores are reasonable. Although, there is room for improvement, the current application showed promising results and seems feasible to deploy on a larger scale.

Keywords: Lifestyle, wheelchair, spinal cord injury, lower limb amputation

# Poster Presentations

# INCLUSION IN SCHOOL PHYSICAL EDUCATION: THE PERSPECTIVE OF PEOPLE WITH DISABILITY

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Abstract ID: 217

Aim

The inclusion of people with disability in the school Physical Education has been the subject of study of several researches in the past years. Assessing how it has been happening is relevant for the area and to be aware of what strategies to adopt. This abstract shows the initial stage of a research aiming to understand the perception of people with disability in the school Physical Education, considering their participation in class, and their relation with classmates and teachers. It is possible, through the participants' statements, to rethink practices to provide a more inclusive environment.

Methods

This research is characterized as qualitative. The semi-structured interview was used for data collection, and, after transcribed, it was analyzed through content analysis. The population was selected by convenience and has been composed, up to now, of three men with motor impairments who attended regular schools and took part in Physical Education classes. Two of the participants were 44 years old and the third participant was 24 years old. The investigation happened in the state of Mato Grosso do Sul, Brazil.

Results

The interviewees mentioned that they enjoyed taking part in Physical Education classes, but two of them said that they did not participate actively, since the activities were not appropriate for an effective participation. In accordance to their age, they went to school mainly in the 1980s, when the inclusive movement had not been established in Brazil. The participant who attended school in the 2000s, had classes where the teacher used adapted activities for his participation, following more inclusive actions. They all presented a good relation with their teacher and classmates. However, the two participants who attended school in 1980s and were not able to take part in every activity, they did not interact so much during the classes. Answers diverged when they were asked about what they would change in their classes. The propositions involved teaching issues such as adaption of activities that can in fact be done by students with disability and teacher professional development focused on inclusive education. The second proposition was about legal actions associated to the fulfilment of the inclusion through national legislation in force, which increase the opportunities for students with disability.

Conclusions

The results point to a convergence in the perception of the moment lived by the participants under the perspective of the inclusive movement, i.e., there is the perception of change in the situation of effective participation with the development of the inclusion process of people with disability in school Physical Education classes in Brazil. This study needs to be concluded so that this analysis can not be extended, but it already shows changes in the participation, and it indicates new demands for broadening the inclusion.

Keywords: Inclusion, School physical education, People with disability

# EFFECT OF NOCTURNAL MELATONIN INGESTION ON BIPEDAL POSTURAL BALANCE AND RISK OF FALL IN PERSONS WITH MULTIPLE SCLEROSIS (MS)

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Abstract ID: 2

Aim

To assess the innocuity and the acute effect of a nocturnal MEL ingestion on postural stability, fall risk and functional mobility, the next morning in people with multiple sclerosis (MS).

Methods

14 with Relapsing remitting-MS (28.36 ± 6.81 years) were evaluated before and after nocturnal ingestion of MEL (6 mg) or PLA. Each session included an assessment of sleep quality by using Spiegel's sleep questionnaire, cognitive assessment by using the Montreal Cognitive Assessment (MOCA) and the Simple reaction Time (TRS) test, static posturographic test with dual task in eyes open (EO) and eyes closed (EC), clinical test of unipedal balance and physical performance tests including the Four Square Step Test (FSST), the Timed Up and Go test (TUGT) and the Timed 25-foot walk test (T25FWT) to evaluate fall risk, functional mobility and walking speed respectively.

Results

There were significant improvements in posturographic parameters in EO condition [mean CoP path length (CoPL): Δ MEL (=before MEL ingestion – after MEL ingestion) (99.44 mm) versus Δ PLA (= Before PLA - After PLA) (=16.82 mm), p = 0.0004, d=1.24); CoP path length in the medio-lateral axis (CoPLX): Δ MEL(40.12 mm) versus Δ PLA(- 19.77), p = 0.04, d=0.93); postural sway area (CoPAr): Δ MEL(98.77 mm²) versus Δ PLA(21.31 mm²), p = 0.0006, d=0.99). Results showed also an increase in unipedal support time [Δ MEL (-15.82 s) versus Δ PLA (1.76 s); p = 0.04; d= -0.63], a decrease in fall risk [Δ MEL (4.22 s) versus Δ PLA(1.11 s); p= 0.0006; d=1.18] and an improvement in functional mobility [Δ MEL(1.15) versus Δ PLA (-0.35); p= 0.01; d=0.72] following nocturnal MEL ingestion compared to the PLA one. However, there is no effect on walking speed neither (p=0.58) on SRT (p = 0.89). Sleep quality [Δ MEL (- 6.64 points) versus Δ PLA (- 3.57); p = 0.004; d= -0.93] and cognitive function [Δ MEL (- 3.57 points) versus Δ PLA (- 0.86); p = 0.008; d= -0.83] were improved during MEL session compared to the PLA one.

Conclusions

Nocturnal MEL ingestion could be a safe therapeutic strategy for improvement of postural imbalance and physical disorders in MS patients. More researches are needed to investigate its chronic effect on these troubles.

Keywords: Multiple sclerosis, Melatonin, postural balance, fall risk, mobility, sleep quality, cognitive functions.

# INCLUSIVE EQUESTRIAN VAULTING: CHILDREN'S MUSCULAR STRENGTH USE AND PHYSICAL ACTIVITY

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Abstract ID: 3

Aim

The World Health Organization recommends that children and youth accumulate at least 60-minutes of moderate-to-vigorous physical activity (MVPA) daily, and muscle and bone-strengthening activities at least three days per week. The overall aim of this pilot study was to describe the engagement of children participating in an inclusive equestrian vaulting camp in strength activities and physical activity. The main research questions were (a) to what extent did vaulters engage in strength activities and physical activity during camp? (b) to what extent did each camp context (stable chores, runway, barrel vaulting, and horse vaulting) contribute? (c) did strength, time spent in strength activities, and physical activity engagement differ between vaulters with and without a disability/health condition? and (d) whether time spent in strength activities and MVPA differed between vaulters meeting minimum strength standards and those who did not.

Methods

Participants (female, n = 6, mean age = 14.2 years, with disabilities/health conditions n = 4) were observed during a five-day inclusive vaulting camp. We utilized a purpose-developed Strength Observation during Vaulting tool and the System for Observing Fitness Instruction Time (SOFIT) tool to assess time spent in strength and physical activity, respectively. We also measured participant's hand-grip strength, push-ups, and sit-ups. Proportions of time spent in camp sections, strength activities, and activity levels were calculated. Univariate analyses of variance (ANOVA) and partial eta squared (ηp2) effect sizes were used to examine whether muscular strength, strength activities, and physical activity engagement differed between vaulters with and without a disability/health condition. Further, whether strength activities and MVPA differed between vaulters meeting minimum strength standards and those who did not.

Results

Participants were active for about half of the observed camp time and spent 37% of their time in MVPA, 11% in light-intensity physical activity, and 21% engaged in strength activities. Analyses of variance revealed that participants with disabilities/health conditions engaged in significantly more sedentary behaviour and spent significantly less time in strength activities than participants without disabilities/health conditions. There were large positive effects on strength and MVPA engagement for those meeting grip strength, push-ups, and curl-ups standards.

Conclusions

Overall, the observations from this camp indicate that equestrian vaulting is a sport and recreational activity that affords children with and without disabilities/health conditions opportunities to engage in MVPA and strength activities. Higher levels of muscular strength also appears to be an important precursor for greater participation in strength activities and MVPA during equestrian vaulting.

Keywords: WHO Guidelines; Disability; Youth; SOFIT; Equine

# THE ASSOCIATIONS BETWEEN PHYSICAL ACTIVITY, PHYSICAL SELF-CONCEPT, AND HRQOL IN INDIVIDUALS WITH INTELLECTUAL DISABILITIES: A PRELIMINARY STUDY

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Abstract ID: 5

Aim

The aim of this study was to examine the associations between physical activity, physical self-concept, and health-related quality of life (HRQoL) in individuals with intellectual disabilities (IDs)

Methods

PA levels were measured by waist-worn accelerometry in adolescents with IDs in 2020. Additional data regarding the measure of physical performance, HRQoL measured, using the 10 x 5 m shuttle test, Chinese version-HRQoL-ID, and PSI-VS-ID instruments, were conducted and analyzed using descriptive statistics, bivariate and regression analyses.

Results

Fifty-six participants with mild to moderate IDs (age range: 15-24 years old, Mage=17.8) provided valid accelerometer data, with 53.6% male and a majority (48.2%) overweight/obese. Participants engaged in 46.0±19.1 minute/day of moderate to vigorous physical activity (MVPA). Approximately 20% of participants met physical activity recommendation for the school-aged (60 minute per day of MVPA) by World Health Organization. Among weight-related parameters, the waist circumstances were more likely to be correlated with total time of sedentary bouts (r=.29), sedentary breaks (r=-.29), muscular endurance (r=-.29), and physical performance of lower limbs (r=.27). HRQoL was significantly associated with physical performance of lower limbs (r=-.30), global self-worth (r=.32), perceived physical self-worth (r=.44), and perceived sports competence (r=.44). A stepwise regression model indicated that perceived physical self-worth (β=.32) and perceived sports competence (β=.29) were significant predictors of HRQoL (R2=.28, $p < .001$). There was a non-significant trend for younger participants to have higher moderate PA (p=.06) and moderate to vigorous PA (p=.07) levels.

Conclusions

Individuals with IDs engaged in little physical activity participation. Psychosocial factors such physical self-concept perceptions may be critical to increase the subjective HRQoL. Future research is needed regarding the interventions and exercise programs implemented for such the population in order to facilitate PA and HRQoL.

Keywords: accelerometer, quality of life, disability, well-being

# A SCOPING REVIEW AND CONTENT ANALYSIS OF THE OUTCOME AREAS OF ADAPTED PHYSICAL ACTIVITIES (APA) INTERVENTIONS FOR CHILDREN AND YOUTH WITH DISABILITIES: USING ICF-CY AS A REFERENCE

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Abstract ID: 21

Aim

Many children and youth with disabilities do not meet the recommended amount of daily physical activity. Compared with rehabilitation therapies, adapted physical activity (APA) provides children with disabilities more opportunities to be physically active outside rehabilitation facilities or schools. However, the mainstream outcome areas of APA implemented for them remains unclear. This research summarizes the outcome areas of APA interventions for children and youth with disabilities using the established International classification of functioning, disability and health: children and youth version (ICF-CY) linking rules.

Methods

A literature search was performed with two procedures. In procedure 1, electronic databases Scopus and EBSCO ALL were used. Procedure 2 was implemented in order to guarantee mainstream APA intervention studies are not missing. In procedure 2, manual-searching method was applied in two major APA journals Adapted Physical Activity Quarterly and the European Journal of Adapted Physical Activity. Keyword searching was used for another two major APA journals Palaestra and the Therapeutic Recreation Journal online databases individually. Criteria were: 1) in English, 2) an intervention/service delivery research, 3) recipients are children or youth with disabilities younger than 25 years old, and 4) a peer-reviewed literature. The contents were linked to ICF-CY mainly by the first author on the further discussion with all co-authors using standardized ICF linking rules.

Results

79 APA intervention studies were included and published between 1985 and 2020, with the majority (82.3%) starting 2000. Sample sizes varied from 2 to 235 participants. Age range was 3-22 years old. 270 outcome items were coded within the categories of ICF-CY. Among outcome items (goals), 45% was focused on body functions while 54% was on activities and participation.

As a result, the main goal of providing APA services towards children and youth with disabilities was improving body functions, in particular confidence, vestibular function of balance, heart rate and aerobic capacity, mobility of joint functions, control of voluntary movement functions and muscle functions. Further, the goal is towards improving activities and participation among children in terms of enhancement of gross and fine motor skills and building informal social relationships, socializing and playing.

Conclusions

This scoping review includes therapeutic intervention studies and does not limit the participants to children and youth with a single type of disability. It provides APA specialists, researchers, and educators a boarder overview of the outcome areas. This will not only encourage the APA practitioners to be more confident when setting a goal for their recipients but also provide the potential children recipients and their families with a more convincing report of wide coverages and the precise outcome areas of APA services that can possibly contribute to.

# IMPACT OF THE COVID-19 PANDEMIC ON QUALITY OF LIFE AMONG PARA-ATHLETES WITH BRAIN IMPAIRMENT

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Abstract ID: 46

The coronavirus disease 2019 (COVID-19) pandemic is characterised by multiple health consequences and the confinement of the entire population as a mitigation measure to prevent further disease transmission. People with disabilities might be at a higher risk of suffering from the psychosocial impact of the pandemic on quality of life due to isolation and social restrictions. The purpose of this study was to describe the impact of confinement caused by the COVID-19 pandemic on the quality of life of Chilean para-athletes with brain impairment.

Methods

Forty male football players with brain impairment (26.1 ± 8.7 years; cerebral palsy=33; stroke=2; traumatic brain injury=5) participated in this study. All participants completed the WHOQOL-BREF quality of life questionnaire in two different moments (before and during COVID-19 confinement), with a gap period of 6 months between each data collection.

Results

A significant reduction (p=0.0001, ES=2.8 [large]) in the perception of quality of life was found between the different periods. Moreover, the physical (p=0.0001, ES=2.4 [large]), psychological (p=0.0001, ES=3.5 [large]), social (p=0.0001, ES=3.0 [large]) and environmental (p=0.0001, ES=4.2 [large]) domains presented lower scores during the COVID-19 pandemic.

Conclusions

These results suggest that the impact of confinement caused by the COVID-19 pandemic reduced the perception of quality of life in all domains in para-athletes with brain impairment. Differentiated strategies with multidisciplinary professional support are necessary for dealing with the pandemic's psychosocial consequences on para-athletes with disabilities.

Keywords: Pandemic, disability, coronavirus, quality of life, para sport, sports health

# BODY COMPOSITION MONITORING FOR FOOTBALLERS WITH CEREBRAL PALSY

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Abstract ID: 105

Aim

CP-Football is an increasingly popular sport. Athletes with cerebral palsy may have interference in body composition according to the degrees of paralysis. Tracking body fat values helps to interpret training, conditioning and performance results. The methods for evaluating body composition in the field are accessible, but may not correctly estimate the values for these athletes. The study aimed to use the sum of 4, 7, and 9 skinfolds as an alternative to assess body composition, correlating with air displacement plethysmography (ADP).

Methods

It is a cross-sectional methodological study carried out with athletes from the Brazilian CP-Football Team (main and under-19). The study was approved by the Research Ethics Committee of the State University of Campinas, under number 2,007,101. The inclusion criteria were to be a high-performance Paralympic athlete; and not present injuries or illnesses over the time of data evaluation. All of them signed the Free and Informed Consent Form. Nine skinfolds were measured with a HarpendenTM adipometer (Marsden UK British Indicators Ltd), on the right or left side (due to hypertonia). The study considered the average of two consecutive measurements for each anthropometric variable. To estimate the sum of the 4th skinfolds (triceps, subscapular, iliac, and abdominal crest); 7th skinfolds (triceps, subscapular, middle axillary, iliac crest, abdominal, anterior thigh, and medial calf); and 9th skinfolds (triceps, biceps, subscapular, chest, middle armpit, iliac crest, abdominal, anterior thigh and medial calf). The survey performed ADP measurements (BOD PODTM, COSMED INC) according to the manufacturer's guidelines (Johnson, K. E. et al.).

Results

Forty-one male athletes (age: 23.3 ± 5.9 years; height: 173.9 ± 6.9 cm; body mass: 68.2 ± 8.8 kg; BMI: 22.5 ± 2, 4 kg / m2) participated in the study. The study found a good correlation between the sum of the skin folds with four (48.7 ± 19.9 mm), seven (79.3 ± 30.0 mm) and nine (91.9 ± 34.3 mm) thickness and the ADP ($r = 0.79$, 0.81 and 0.82; respectively, $p < 0.001$).

Conclusions

Our objective was to analyze the relationship between sums of skinfolds and ADP and the main result is the sums of skinfolds, which represents an option within anthropometry, as they present a good correlation. This method provides a quick interpretation of the information, allowing the comparison between the athlete and himself since there are still no reference values for the sum of the skinfolds of the athletes of CP-Football. This alternative is also advocated by the International Society for the Advancement of Kinanthropometry (Reilly, S. et al) as an option to estimate variations in body composition. This trend was reported in a study (Clarys et al.) on football. In summary, the sum of four, seven, and nine skinfolds has a good correlation for monitoring the body composition of these athletes.

Keywords: Para-Athletes; Anthropometry; Cerebral Palsy

# TRAINING TIME AND SPORTS CLASS: AN ANALYSIS OF BRAZILIAN PARALYMPIC ATHLETES IN SPORT

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Abstract ID: 162

Aim

The class and the athlete's sex are factors that directly influence the athlete's performance in Paralympic Sport. In this sense, this study aimed to identify whether there is a difference between the time of involvement in the sport, the nature of the disability (congenital [CD] and acquired [AD]), and sex of Brazilian Paralympic athletes. The main questions that guided this study were: i) does the nature of the disability influence the training time of Para athletes?; ii) can sex be a predominant factor for the training time of Para athlete in sport?

Methods

The data were collected via a questionnaire applied to Brazilian Para athletes who participated in the Lima 2019 Para Panamerican Games (N= 106; women n= 36; men n= 68; age n= 29.06; physical impairment n= 77; visual impairment n= 21; cerebral palsy n= 8; CD n= 45, AD n = 61). The results of age and training time were computed in years. The statistical software JASP 0.14.1 was used for data analysis. Thus, a independent test was performed to verify the difference between the time of involvement in sport in the CD and AD groups and male and female groups. The significance level was set at 5% (p-value <0.05). In addition, the effect size -ES (Cohen's d) was used.

Results

The results of the analysis concerning the nature of the disability showed 34,82±7,59 (CD) and 24,66±5,69 (AD) years with significant difference and the ES detected a very large difference (p<0.01, ES=0.965), training time 12,63±5,92 (CD) and 9,06±4,19 (AD) years, there is a significant difference (p<0.01) and ES detected a large difference (0.528) between the groups. The analysis of the difference of training time based on sex showed age 31,78±8,42 (male) and 28,08±8,72 (female) years with no significant difference between the groups(p>0.069, ES=0.068), the training time was 12,35±5,90 (male) and 8,72±3,74 (female) without significant difference (p=0.07) and the ES detected a medium difference (0.313) between the groups.

Conclusions

This study with Brazilian athletes showed significant differences between the congenital and acquired groups despite the CD being older (~ 10 years) and with more training time. This training time difference does not follow this same relationship (~3.5 years). Regarding the analysis between the different sexes, no differences were found between any of the variables, however, the sample has a limitation since the group of women represented only 33% of the sample group, which sometimes reflects on barriers related to the access to a Para sport. Thus, according to our findings, the factors defining disability and gender, which influence the performance of athletes in Paralympic sport, appears not to be factors to be considered in relation to the time of involvement of Para athletes.

Keywords: Deliberate Practice; Development in Sport; Paralympic Sport; Disability; Performance Model

# WRIST ACCELEROMETER CUT-OFFS FOR ESTIMATING SEDENTARY BEHAVIOR AND PHYSICAL ACTIVITY IN ADULTS WITH DOWN SYNDROME

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Abstract ID: 179

Aim

Cut-offs for estimating the levels of sedentary behavior and physical activity are based on the relationship between energy expenditure and accelerometer output. This relationship may be different between adults with and without Down syndrome (DS) and supports the development of DS-specific accelerometer output cut-offs. The aim of this study was to develop cut-offs for sedentary behavior and moderate-to-vigorous physical activity (MVPA) for adults with DS using output from a wrist-worn accelerometer.

Methods

Participants were 16 adults with DS (10 men & 6 women; age 31 ± 15 years) who performed 6 min trials of sitting; playing an app on a tablet; drawing; folding clothes; sweeping; completing a fitness circuit; moving a box; playing basketball; and walking at a preferred speed and 0.8 and 1.4 m.s-1. The rate of oxygen uptake was measured with a portable metabolic system (K4b2, Cosmed) and then expressed in Metabolic Equivalents (METs). Vector Magnitude counts were measured using a triaxial accelerometer (wGT3X-BT, Actigraph) worn on the non-dominant wrist. Cut-offs for sedentary behavior (≤1.5 METs while sitting) and MVPA (≥3 METs) based on Vector Magnitude were derived using Receiver Operating Characteristic (ROC) curves. Overall classification performance was assessed with the area under the ROC curve. Optimal cut-offs were selected based on the lowest Index of Union (IU) for maximizing both sensitivity and specificity.

Results

Area under the ROC curve was very high for sedentary behavior (0.99; 95% CI: 0.98 – 1.00) and acceptable for MVPA (0.83; 95% CI: 0.76 – 0.89). The optimal Vector Magnitude cut-off for sedentary behavior was ≤ 2074 counts·min-1 (sensitivity 0.98; specificity 0.97; IU 0.03) and for MVPA ≥ 4690 counts·min-1 (sensitivity 0.82; specificity 0.71; IU 0.12).

Conclusions

This study presents preliminary cut-offs for estimating sedentary behavior and physical activity in adults with DS based on wrist accelerometer output. Classification accuracy was excellent for sedentary behavior and acceptable for MVPA. Wrist-worn accelerometers hold promise for the assessment of physical activity and sedentary behavior in adults with DS. Supported by NIH Grant R15HD098660

# PARTICIPATION IN A REHABILITATION PROGRAM BASED ON ADAPTED PHYSICAL ACTIVITIES IN NORWAY: A QUALITATIVE STUDY OF EXPERIENCES OF IMMIGRANT PARENTS AND THEIR CHILDREN WITH DISABILITIES

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Abstract ID: 214

Aim

By exploring immigrant families' experiences of participating in a three-week rehabilitation program focused on adapted physical activity in Norway, this study investigated how beneficial, culturally adapted, and accessible the services were from the families' perspectives.

Methods

A hermeneutic design with semi-structured interviews supplemented by participant observation was applied. Inductive thematic analysis was conducted.

Results

Three themes were identified: "learning through participating," "sharing the same experience," and "gaps in service delivery." By participating in physical activities together with their children, parents became aware of their children's capabilities and interests, as well as the available resources. Parents also socialized and exchanged experiences and information with each other. Children learned new skills, became aware of their preferences and capabilities, built friendships, and improved their social skills. However, a lack of cultural adaptation, such as insufficient information, as well as the location of the rehabilitation center, language barriers, and exclusion of siblings affected accessibility of the services to immigrant families.

Conclusions

Although the beneficial aspects of the services were demonstrated, the cultural adaptation and accessibility of the services were limited. Providing flexible and culturally adapted services that meet immigrant families' needs may improve the accessibility of rehabilitation services to immigrant families.

Keywords: rehabilitation, immigrant families, children with disabilities, physical activity, participation

# WHAT FITS ME? PROCUREMENT OF ADAPTED TRICYCLE FOR ACTIVITY AND PARTICIPATION

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Abstract ID: 218

Aim

To determine whether specific biomechanical tests and/or technological measurements can help therapists and people with disabilities to apply for the most appropriate adapted tricycle.

Methods

Patients participating in a rehabilitation programme and planning to apply for an adapted tricycle were invited to participate in an observational study. Measurements used were watts when pedalling, 6-minute walk test, the Trunk Impairment Scale, 30 second sit-to-stand test, Oxford Scale of muscle strength and range of motion testing. Nonparametric correlation tests were performed using SPSS to investigate relevant associations between test results and tricycle type.

Results

The study included 37 participants with a large variety of complex disabilities who applied for 10 different adapted tricycles. Participants ranged in age from 5 to 79 years (M = 24 years, SD = 20), with almost half (n = 18, 49%) under 18 years of age. More than half of the participants (n = 21, 57%) were women. Analyses showed weak correlations between age, gender, 6-minute walk test, 30-second sit-to-stand test and type of tricycle.

Conclusions

None of the conducted biomechanical tests and technological measurements could alone predict the right adaptive tricycle for each person. Large variations in personal characteristics and needs indicate that individually tailored assessments by experienced professionals are necessary to find the most appropriate tricycle.

Keywords: Rehabilitation, adapted physical activity, tricycle

# PROFILE OF PARTICIPANTS OF THE 1ST INTERNATIONAL SYMPOSIUM OF ADAPTED PHYSICAL ACTIVITY IN SOUTH AMERICA

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Abstract ID: 231

Aim

Records indicate that the first participation of a Brazilian researcher in the International Symposium of Adapted Physical Activity - ISAPA was in 1989, in Berlin, Germany. However, nowadays, the participation of students, professionals and researchers from South America in these events is still insipient. In order to strengthen the area of Adapted Physical Activity (APA) in this region, the “I International Symposium of Adapted Physical Activity” was promoted in the South American continent, on the 6th and 7th of November 2020. The virtual event was held by the University of San Sebastian, in Chile, with the support of the International Federation of Adapted Physical Activity - IFAPA, and invited speakers from Brazil, Canada, Chile, Spain, United States and Venezuela. It is worth mentioning that, during the general assembly it was founded the South American Federation of Adapted Physical Activity - SAFAPA. Understanding the importance of a diagnosis of the actors involved in the area of APA in this region, the present report aimed to analyze and describe the profile of the participants in that event.

Methods

From a quantitative and descriptive perspective, a survey was developed, whose data were obtained through an electronic form, made available to participants during registration on the event. The data were inserted in excel spreadsheets and received descriptive statistical treatment.

Results

A total of 674 participants attended the event, which had Spanish as its official language. As for the origin, 94% of the participants were from South America, 5% from Central America and 1% from North America and Europe. Nine of the 12 countries in South America were represented: Chile (57.1%), Brazil (20.6%), Colombia (10.6%), Argentina (3.9%), Peru (3.3%), Venezuela (2.8%), Ecuador (1.3%), Paraguay (0.2%), and Uruguay (0.2%). The scope of the topics presented during the conference involved inclusion of people with disabilities in APA and Sports. It was identified mainly Physical Educators and Kinesiologists (92%), but there was the presence of trainers, physiotherapists, special education teachers among others. As for the level of education/degree, it was observed that 21% have master's degrees and 6.3% have doctorates/post-doctorates. Participants' time in the APA area ranged between one and 33 years. It is noteworthy that 86 participants (12.8%) teach subjects related to the theme in initial training courses, and 131 (20%) report having scientific production in the area.

Conclusions

Considering this a first foray into the studied universe, the profile of the participants in the “I International Symposium on Adapted Physical Activity” demonstrated that South America has human potential (students, professionals and researchers) to strengthen actions in the field of APA. It is expected that the agents, actions and efforts, now brought together in a Regional Federation, will boost the academic and scientific development of APA in that continent.

Keywords: Adapted Physical Activity. South America. Dissemination of knowledge.

# TAEKWONDO W.T TRAINER'S PERCEPTION TO TAKE IN DISABLED PEOPLE IN CHILE

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Abstract ID: 233

Background

At present, the world is undergoing a paradigm change concerning the view of the actual potential that people with disabilities can have, even more so when physical activities and sport are involved. This research's objective is to measure the Taekwondo trainers (acknowledged by the world taekwondo federation, W.T. from now) perception of their abilities to take in people with disabilities in their class.

Methods

The research was done at a national level, to 74 trainers affiliated with the National Sports Federation of Taekwondo W.T., through non-experimental/phenomenological type of research, the tool used in this research was elaborated by Raquel Suría (2012) which measures the perception of the teacher towards the inclusion of people with disabilities as practitioners. This tool consists of a Likert-type scale from 1 to 5 (1= totally agree, 5= totally disagree) and it has 23 items where the trainer's perception is appraised. It consists of 4 sections, the first one gathers the trainer's information, the second one measures the uneasiness of the trainer for having people with disabilities in their class, the third one analyzes the teacher's perception over their preparation to train people with disabilities and the last one evaluates the appreciation from the practitioners without disabilities to the practitioners with disabilities.

Results

74.3% of the W.T. trainers in Chile states that they have no issues modifying their class to take in practitioners with disabilities. As to the proper formation for trainers refers, 41.9% rejected the idea of having a specialist to exclusively train the practitioners with disabilities, while a 29.7% agrees to the idea of having a specialist to train a practitioner with a disability, and 28.4% neither agree nor disagree with the previously stated idea. is stated that 10.8% of the W.T. trainers feel qualified to take in people with disabilities in their class, and lastly, 81.1% of the W.T. trainers think they need proper formation to be able to work with people with disabilities.

Conclusions

Based on this research, a high percentage of the W.T. trainers in Chile say that they don't feel awkward nor have difficulties communicating while working with a practitioner with disabilities and that they need more qualifications to work with them and they feel concerned for not being able to give the knowledge properly according to their limitations. Taekwondo is one of the sports with the highest potential to include people with disabilities because of how much affect the personal development of the practitioner. Analyzing the answers, the need for formation programs that give the Taekwondo W.T. trainers the tools to work with people with disabilities according to their needs is evident.

Keywords: Inclusion, training, disability, preparation, sport

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# EFFECTS OF CANITHERAPY AND PHYSICAL ACTIVITY ON CORRECTION OF EMOTIONAL AND BEHAVIORAL DIFFICULTIES IN YOUNG PEOPLE WITH COMPLEX DISABILITY

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Abstract ID: 237

Aim

In recent decades, interest in animal therapy has grown and its benefits and value have been increasingly recognized (Neagu & Zsuzsanna, 2017). There is also a lack of research analyzing the effects of dog therapy on physical activity. The aim of the study was to analyze the influence of dog therapy (canitherapy) and physical activity on the correction of emotional and behavioral difficulties in young people with moderate and severe complex disabilities.

Methods

Total of 53 individuals with a range of complex moderate to severe disability were studied. All subjects had intellectual disability and at least one concomitant disability: multiple developmental disorders (N = 23), Down syndrome (N = 6), visual impairment (N = 4), cerebral palsy (N = 16), various movement disorders (spina bifida, trauma, etc.) (N = 4). The age of the subjects ranges from 18 to 34 years. All subjects are residents of social care homes. Procedure: Testing with multidimensional Behavior Assessment System of Children (BASC-2); Experiment: Subjects were divided into 2 groups - control (25 subjects) and experimental (28 subjects). A physical activity program for the control group and a complex canitherapy and physical activity program for the experimental group were developed. Data from Teacher Rating Scale (TRS) was recorded and processed using the Child Behavior Assessment System data processing computer program BASC-2 ASSISTTM Plus (2004).

Results

After the Traditional Physical Activity Program the means of T values on 9 scales decreased to the mean level (T = 41-59), except for the Atypicality scale (T= 68.8) ($p < 0.05$). One adaptive scale - Functional Communication increase from clinically significant level (T = 29.5) to at risk level (T=38.7) ($p < 0.05$). After the Canitherapy and Physical Activity Program Anger Control, Social Development Disorders, Emotional Self-Control and Negative Emotionality decreased to a medium level (T = 41-59) ($p < 0.05$), while Learning Problems, Atypicalness and Obstruction remained at the level of increased risk (T = 60-69) ($p < 0.05$). Functional communication increase from clinically significant (T = 27.4) level to risk level 35.9 ($p < 0.05$).

Conclusions

The physical activity program together with the canitherapy and the traditional physical activity program alone had a positive effect on the correction of emotions and behavioral characteristics of young people with complex disabilities.

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Keywords: Canitherapy, physical activity, Behavior Assessment System of Children (BASC-2), moderate and severe complex disabilities.

# THE SCOPE OF RESEARCH AND PRACTICE IN PHYSICAL ACTIVITY PARTICIPATION FOR PERSONS WITH PHYSICAL DISABILITIES IN LOW-INCOME COUNTRIES: A SYSTEMATIC SCOPING REVIEW

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Abstract ID: 241

Aim

Physical activity (PA) participation is essential for the health of persons with disabilities (PWDs) and it is positively influenced by the level of PA promotion. This evidence mostly comes from middle- and high-income countries. This needs consideration as close to two-thirds of all PWDs live in low-income countries (LICs). Therefore, this study examines the current scope of research, policies, programs, and organizations on PA participation for persons with physical disabilities in LICs.

Methods

Applying a systematic scoping review methodology, we search for data sources such as reports and articles inventoried in peer-reviewed literature databases (MEDLINE, CINAHL, SportDiscus, Global Health, PAIS (global public policy and social issues) and Sports Medicine & Education Index Sports Medicine & Education Index)), listed in grey literature databases (ProQuest Dissertations and Thesis Web of Science), or posted on a website identified through customized Google searches and reference lists. We also consult with experts for recommendations of additional sources. Inclusion criteria were based on studies, policies, programs, and organizations focusing on PA participation and promoting PA participation for persons with physical disabilities in LICs, including persons with physical disabilities in any age categories, using qualitative and/or quantitative research methods (studies only) and conducted in any time.

Results

15 articles meet the inclusion criteria with the publication year of studies ranged from 1986 to 2020. The nature of PA type in which PWDs participate includes sport, exercise, recreation, leisure, athletics, and walking. PWDs included in this review are stroke patients, CP (cerebral palsy), Orthopedic patients (patients with mechanical back pain), students with special needs (visual, hearing, intellectual, and mobility impairment), lower limb amputations, and with the combination of mobility, visual and hearing impairment. The preliminary result shows more than half of the studies (53%) reported low PA participation for PWDS. Participation in PA is influenced by the type of ambulatory devices, lack of knowledge of where to exercise, lack of self-motivation to exercise safely, limited access to mainstream health promotion services, lack of adequate and appropriate activities, facilities, equipment, and funding, economic constraints and the current biomedical model in the healthcare system.

Conclusions

This scoping review is an initial step to identify existing research and practice on PA participation for persons with disabilities in low-income countries. It indicates the need for more research in the area by providing a guide for policymakers, program developers, researchers, and health promoters for understanding the current situation of PA participation and identifying gaps in policy, practice, and research.

Keywords: Disability, low-income countries, participation, physical activity

# CAN A SPORT FOR DEVELOPMENT METHODOLOGY MAKE INCLUSION REAL? - MONITORING AND EVALUATION REPORT OF FUTBOLNET DIVERSITY PROGRAMME OF BARÇA FOUNDATION. SEASON 2019/20

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Abstract ID: 243

Aim

The main purpose of this study is to assess Barça Foundation's sport for development metodology, Futbolnet, which aims to promote inclusive sport activities that provide trust, resources and spaces where experiencing inclusion as a reality.

Methods

For this study, the Contribution Analysis by Mayne has been used. The questions presented were as following: • What things have been changed thanks to include the inclusive perspective to Futbolnet methodology? • What circumstances have been necessary to cause the expected effect? • What else circumstances have been crucial to reach the observed effects? • What could be improved? Different agents such as participants, families, coaches, and community have been approached to better understand what works into people with disabilities' inclusion. It was aimed to understand every change, how and why, as well as the impact of other factors in the process. Along this research evidence has been generated to analyse whether the activities have been implemented as planned, the results and consequences expected have been reached and what other factors have influenced the observed changes.

Results

The conducted researched reveals that Futbolnet methodology works as a unique leisure space where physical activities and games are effectively adapted to needs of children and young people with disabilities. Futbolnet facilitates that participants with disabilities are able to have regular participation in equity conditions within sport. This research also shows that young people who, jointly play with other youngers with disabilities, reach higher punctuation in terms of life skills – interpersonal relations, accountability, and commitment. However, it has not been possible to relate participation in the project with an improvement in the social and life skills development of participants. In the other hand, it has been revealed that participating in the virtual sessions during the pandemic has contributed to reduce the lock down effects, especially for those who connected regularly.

Conclusions

The evaluation has highlighted that Futbolnet is a good option for physical activities and sport session for children and young with disabilities, making their social and physical inclusion a reality. This methodology also contributes to visualise the use of sport as a tool for social inclusion in those contexts where sport is not an option or there is an existing lack of initiatives and resources. Finally, it is essential that the coaching team is properly trained and feel prepared to adapt sport sessions to people with disabilities.

Keywords: sport for development, children, youth, inclusion

# CORRELATION BETWEEN BODY COMPOSITION, VO2PEAK, AND SPRINT TIMES IN HIGH PERFORMANCE WHEELCHAIR RUGBY PLAYERS

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Abstract ID: 170

Aim

Numerous physiological and skill-based variables determine optimal performance of athletes. For high performance athletes understanding the relationship between variables is critical for designing best training practices to achieve competitive success. The purpose of this study was to examine the correlation between body composition, VO2peak, and sprint times in high performance wheelchair rugby players.

Methods

Over the course of two years data were collected during national wheelchair rugby team selection and training camps. Player datasets that were complete (all tests performed) were included in the analyses. For players with more than one complete dataset, the set with the highest VO2peak value was utilized. Participants included 15 male wheelchair rugby players [Class 0.5 = 2, Class 1.0 = 3, Class 1.5 = 2, Class 2.0 = 3, Class 2.5 = 2, Class 3.0 = 2, Class 3.5 = 1]. Body composition was measured using dual-energy x-ray absorptiometry (DXA). From the DXA scan data, amount of lean body mass (kg) in the whole body, trunk, and arms were used in the analyses. VO2peak was measured using an incremental test with a Parvo metabolic cart while players pushed on a WheelMill ergometer system. Sprint time over a distance of 90 ft (27.43 m) was captured using timing gates; best of three was used for the analyses. Mean and standard deviation (SD) for each variable were computed. Correlation coefficients (r) were calculated among all variables.

Results

Average body mass of the players was 67.65 (14.74) kg. Lean body mass values were: Whole Body = 47.26 (10.00) kg, Trunk = 24.02 (4.41) kg, and Arms = 7.66 (2.10) kg. Mean VO2peak was 25.78 (6.30) ml/kg/min. Sprint time mean was 7.69 (0.93) sec. Moderate correlations were found for Whole Body Lean_Sprint Time (r = -0.38), Trunk Lean_Sprint Time (r = -0.47), and Trunk Lean_VO2peak (r = 0.33). Strong correlations were found for Arm Lean_Sprint Time (r = -0.63) and Arm Lean_VO2peak (r = 0.53).

Conclusions

Lean mass, in particular higher amount of lean mass in the arms is associated with faster sprint times. In addition, higher levels of lean mass, especially in the arms, are associated with higher VO2peak values. Wheelchair rugby players and coaches must consider the importance of gaining lean tissue for both sprint and aerobic performance.

Keywords: Wheelchair sport, lean body mass, sprinting, aerobic capacity, wheelchair rugby

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# IS VECTOR MAGNITUDE VS. VERTICAL AXIS MORE ACCURATE AT PREDICTING OXYGEN UPTAKE IN ADULTS WITH AND WITHOUT DOWN SYNDROME?

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Abstract ID: 48

Aim

Adults with Down syndrome (DS) demonstrate an altered movement pattern during walking, which is associated with a higher energy cost compared to adults without DS. Vector Magnitude (VM) counts—provided by triaxial accelerometers—are a metric of three-dimensional acceleration that may better describe body motion and estimate the rate of oxygen uptake (VO2) during physical activity and sedentary behavior than traditional Vertical Axis (VA) counts. The purpose of this study was to compare the accuracy of VM vs. VA counts in estimating VO2 in adults with and without DS across different physical activities and sedentary behaviors.

Methods

Sixteen adults with DS (10 men; age 31 ± 15 years) and 19 adults without DS (10 men; age 24 ± 5 years) performed 12 tasks: sitting; playing app; drawing; folding clothes; sweeping; fitness circuit; moving box; basketball; standing; and walking at the preferred speed and at 0.8 and 1.4 m.s-1. VO2 was measured with a portable spirometer (K4b2, Cosmed) and VA and VM with an accelerometer (wGT3X-BT, Actigraph) on the non-dominant hip. Multi-level regression was used to predict VO2 from VA or VM for each group. Model fit was evaluated with the R2, and accuracy with Bland-Altman plots and absolute percent error using 3-way (method-by-task-by-group) ANOVA.

Results

VM and VA were significant predictors of VO2 in adults with DS in separate models ($p < 0.001$; $R2 = 0.74$ and 0.65, respectively), as well as adults without DS ($p < 0.001$; $R2 = 0.75$ and 0.61, respectively). In 3-way ANOVA for absolute error, there was a significant method-by-task interaction ($p < 0.001$); no other interaction was significant. Paired samples t-tests showed that absolute error was significantly lower for VM than VA counts for sitting, playing app, drawing, sweeping, standing, and basketball ($p \leq 0.005$). However, absolute error was lower for VA than VM for walking at 0.8 m.s-1 ($p = 0.005$). There were no other differences for other tasks. Bland-Altman plots for adults with DS indicated zero mean error for both models, but limits of agreement were narrower for the VM than the VA model (-5.57 to 5.57 and -6.44 to 6.44 ml.kg-1.min-1, respectively). Similarly, Bland-Altman plots for adults without DS indicated nearly-zero mean error for VM and VA (-0.02 and -0.01, ml.kg-1.min-1, respectively) with narrower limits of agreement for the VM than the VA model (-6.21 to 6.17 and -7.75 to 7.74 ml.kg-1.min-1, respectively).

Conclusions

VA and VM counts are significant predictors of VO2 in adults with and without DS. VM counts more accurately estimate VO2 compared to VA counts for most activities. Development of accelerometer-based prediction of physical activity levels in adults with and without DS may improve by utilizing VM counts.

Keywords: Disability, physical activity, sedentary behavior, accelerometers

# (DIS)EMPOWERMENT OF NON-PARALYMPIC DISABLED ATHLETES BY THE PARALYMPIC MOVEMENT FOCUSING ON PARTIALLY SIGHTED FOOTBALLERS

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Abstract ID: 16

## Aim

The current vision of The Paralympic movement is to make for an inclusive world through Para-sport (International Paralympic Committee, 2019). Thus, it is essential for not only Paralympic athletes but also disabled people who are not directly a part of the Games to be empowered by the Paralympic movement. Although there is some research discussing the (dis)empowerment effect of the Games for disabled people in daily life (Akimoto & Sawae, 2020; Purdue & Howe, 2012), there is still a gap in research discussing the (dis)empowerment effect for non-Paralympic disabled athletes by the Paralympic movement. The aim of this research is to clarify empowering and disempowering factors for non-Paralympic disabled athletes by the Paralympic movement, focusing on national-level partially sighted footballers in Japan.

## Methods

Interviews were undertaken online for 9 national-level partially sighted football players. The questions were based upon the subjects' thoughts and opinions towards the Paralympic movement. Subsequently, the interview data was transcribed and analyzed using thematic analysis. Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data and widely used within and beyond the field of psychology (Braun & Clark, 2006).

## Results/Discussion

The data indicated that the current Paralympic movement empowers the subjects by contributing to increasing the general awareness of disability and disability sports. However, the subjects were conscious about the perceived gaps of circumstance, media representation, evaluation, recognition, etc. between themselves and Paralympic athletes which consequently disempower the subjects. Another indication from the data regarding disempowerment was that the current Paralympic Games are mainly represented by athletes with mobility impairments who often have visible symbols (such as wheelchairs) representing their impairment. This poses the question as to whether the Games can enlighten people in society to fully understand disabled people and athletes without visible symbols to represent their impairment, such as partially sighted footballers.

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Keywords: The Paralympic Movement, (Dis)empowerment, Non-Paralympic Disabled Athlete, Thematic Analysis

# APA ONLINE DURING COVID-19 FOR ITALIAN UNIVERSITY STUDENTS: PERCEIVED USEFULNESS AND EASE OF USE OF THE TECHNOLOGY

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Abstract ID: 29

In Italy the lockdown due to COVID-19 pandemic and subsequent public health rules, have limited the practice of physical exercise in gyms. The adapted physical activity project called "ABILI SI DIVENTA", organized by the University of Pavia for students living with different abilities, was quickly modified to be performed online.

Aims

The study aimed to evaluate the perceived usefulness and ease of use of the technology employed to perform an online adapted physical activity program (OAPA) in a sample of three female students living with different abilities.

Methods

From the 23rd March to the 25th June 2020, three students, took an OAPA and gave their consent to participate in the study using these pseudonyms: Ada, Emma and Lara. All participants use the wheelchair but live with different situations (ICD-10): Ada, myelomeningocele (Q05.1); Emma, spinal cord injury (T09.3); Lara, cerebral palsy (G80.0). The OAPA included two supervised 1-hour/week face-to-face sessions performed using a medical device with integrated video-call (Kari, Euleria srl, Trento, Italy). Sessions were led by an exercise specialist. The specialist proposed aerobic, resistance, functional and stretching exercises after evaluating the home spaces and the tools available. In order to make the resistance exercises more effective, a kit of elastic bands with different resistance (Matrix Italia, Ascoli Piceno, Italy) was sent to participants. Technology Acceptance Model (TAM) was administered at the end of the study to evaluate how participants accepted and used the technology employed for the OAPA and their attitude to use it again. TAM consisted of 4 areas: perceived ease of use (PEU), perceived usefulness (PU), attitude towards use (ATU) and intention to use (ITU). A Likert scale from 1 "totally disagree" to 7 "completely agree" was used. Data were normalized and treated in accordance with Marradi and Gasperoni1.

Results

The answers of two participants achieved the highest score in all areas. The third ones were close to the maximum score in each area. Results were: Total score (TS) 24.1, PEU 7, PU 6, ATU 5.6, ITU 5.5. Emma and Lara results were the same: TS 28, PEU 7, PU 7, ATU 7, ITU 7.

Discussion

The main limitation of the study is the small sample size. The high scores registered in TAM questionnaire suggest that the technology used for the OAPA was perceived as easy and useful. This could derive from the habit of young people to use technology and from the use of a platform created specifically for tele-exercise. Currently the students are continuing to train with the OAPA. An OAPA could be useful for students living with different abilities with high TAM scores, during periods of social distancing or as a support to face-to-face activities. Reference Marradi, A. & Gasperoni, G. (2002), Costruire il dato 3. Le scale Likert, Milan, Franco Angeli

Keywords: COVID-19, university students, online adapted physical activity

# PEDAGOGICAL MODEL FOR INCLUSION OF DEAF SCHOOLS IN THE AREA OF PHYSICAL EDUCATION OF THE VENEZUELAN EDUCATIONAL SYSTEM A HERMENEUTICAL VIEW FROM THE PHYSICAL EDUCATION CLASS

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Abstract ID: 144

Aim

The main objective of this research was to generate a pedagogical model for the inclusion of deaf schoolchildren in the area of physical education of the Venezuelan educational system. The research responded to a qualitative paradigm of an analytical interpretive type, for which a hermeneutical exercise was applied throughout the reflection process as a method of approaching the studied reality, supported by humanist philosophy, with the intention of addressing with depth and coherence the object of study until the paradigmatic construction of this research.

Methods

Documentary review, observation, in-depth interviews and the focus group were used as techniques to collect the information. The key informants of the study corresponded to a deaf male schoolboy aged 10 years and with two years of inclusion in education, conventional teacher, a 37-year-old female physical education specialist teacher with 15 years of experience in the physical education area, and a 51-year-old male manager with 12 years of managerial experience who live in the primary education subsystem of the Venezuelan educational system, from which the specific information for the research was obtained, thus emerging the dimensions and categories. For this, the opinion matrices and analytical and synthetic tables were used as the information analysis technique that allowed the information to be triangulated to contrast the common aspects that were taken from each instrument used, originating the primary finding as an exclusion criterion that the Teachers and directive personnel in their pedagogical praxis fail to fully include deaf schoolchildren due to ignorance of their identity and culture. This generates reflection on this fact as a negative cause in the impact on the academic processes of deaf students, since that very little information on inclusive languages, therefore requires the unconditional commitment of those who exercise this mission. Hence, teachers must seek, from the co-responsibility of their profession, the holistic and inclusive development of deaf schoolchildren who are in their charge.

Conclusions

The fact that the teachers and the manager are not very aware of the use of the Venezuelan sign language is highlighted, noting a notable deficiency only due to the fact that they do not have a study plan or planning and regulations of the national news with its educational policies. However, it is important to note that the key informants have specified the theoretical elements on disability in physical education and that they incorporate it as a significant strategy in the teaching process.

# AEROBIC EXERCISE, BLOOD PRESSURE AND NITRIC OXIDE IN ADOLESCENTS WITH DOWN SYNDROME

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Abstract ID: 9

Aim

Individuals with Down syndrome (DS) exhibit low work capacity and oxidative stress (OS). However, physical activity has been associated with reduced OS in clinical trials. An increased level of OS may be related to endothelial dysfunction and overexpression of superoxide dismutase-1 (SOD1), encoded by the SOD1 gene located on chromosome 21 in individuals with DS. The aim of this study was to investigate the hemodynamic and salivary nitric oxide (NO-) response to submaximal ergometric exercise of adolescents with DS.

Methods

Eleven adolescents with DS (age: 14.1 ± 1.0 years, height: 149.8 ± 9.51 cm, total body mass: 52.4 ± 14.37) and 10 without DS (age: 13.7 ± 1.25 years, height: 162.0 ± 7.11, total body mass: 53.5 ± 5.1) participants performed submaximal ergometric exercise (EE) on the treadmill. EE included increments of 0.8 km·h-1 speed every minute and an increase of 1% on the slope every 0.8 min-1 until voluntary-exhaustion. Blood pressure (BP) and saliva NO- were collected at rest, immediately after the session, and 5 and 10 minutes postexercise. NO- was obtained through the Griess reaction method. A two-way mixed ANOVA with Bonferroni's post hoc was used to analyze all dependent variables.

Results

Walking economy and VO2peak estimated overall were lower in participants with DS than participants without DS ($p<.05$). There were no statistically significant two-way interaction between groups for blood pressure (BP), rate product pressure (RPP) and heart rate (HR). But differences within groups in relation to rest were observed for time systolic BP ($F [2, 38] = 10.29$, $p = 0.001$), diastolic BP ($F[2, 38] = 24.10$, $p = 0.001$), RPP ($F[2, 38] = 70.10$, $p = 0.001$) and HR ($F[2, 38] = 12.35$, $p = 0.001$) in adolescents without DS. Regarding the NO- salivary, there was no statistically significant two-way interaction between group and time for NO- $F(2, 32) = 0.40$, $p = 0.66$. However, after simple analysis, differences between groups were observed for baseline ($p = 0.016$) and recovery (5 min) ($p = 0.048$).

Conclusions

Adolescents with DS had lower work capacity and attenuated HR and BP responses to sympathy excitation compared with controls. Nevertheless, this may be due to the higher bioavailability of baseline and time recovery salivary NO- compared to no DS. However, it can be an increased metabolic response to produce NO- in order to reduce SOD as a defence mechanism in order to modulate vascular function. However, this abnormal production of NO- may be related to lower vascular resistance, blood flow and endothelial dysfunction in adolescents with DS.

Keywords: Intellectual disability. Cardiovascular responses. Oxide Nitric

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# INCLUSIVE FREE PLAY AND ANALYSIS OF ACTIVITY TENDENCIES OF CHILDREN WITH AND WITHOUT DISABILITIES

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Abstract ID: 80

Aim

The state of adaptive sports in Japan is progressing under the influence of the Convention on the Rights of Persons with Disabilities. Participation in leisure and recreational activities is related to improving skills in other curricula; thus, productive use of leisure time contributes to a more fulfilling life within a community. With respect to inclusion, it is important to obtain a wide range of information on different types of inclusive practices and to identify factors that contribute to inclusive physical activity. Therefore, the purpose of this study was to clarify the physical activity tendencies of children with and without disabilities in an inclusive setting.

Methods

The activity we focused on was “Inclusive Physical Activity Club for Children,” which is called “Kinder Platz” in the Sapporo Campus of Hokkaido University of Education. Recreational activities were recorded between 2011 and 2020 using a fixed video camera. The participants included 15 children—5 children with and 10 children without special needs (ASD). Recordings from January 2019 to January 2020 were used in this study. Each 3-h video tape recording was sampled as a still image every 10 min. The sampled still images were used to analyze which play activities the children were engaged with, such as a trampoline, slackline, hammock, mats, climbing wall, swing-net (new item in 2020), and free play. The activities were recorded with the participants’ consent.

Results & Discussion

In 2019, the hammock was the most popular for children with and without ASD, followed by the trampoline. A year later, in 2020, the trampoline was the most popular among children with ASD, while the new swing-net was the most popular among children without ASD. An analysis of the play activity by area suggested that there was a difference in the participation tendencies of children with and without ASD, depending on the environmental settings of the play area equipment. Furthermore, at the beginning of activity each day, children with ASD and children without ASD often played in different areas; however, over time, they were observed playing together on the trampoline and swing-net. We found that the use of physical activity may be an effective way to develop not only the physical abilities of children with disabilities, but also to support them in their collaboration and social skills.

Keywords: Inclusive free play, ASD, trampoline

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# A COMPARISON OF THE AMOUNT OF PHYSICAL ACTIVITY IN INCLUSIVE FREE PLAY AND EXERCISE INSTRUCTION SITUATIONS

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Abstract ID: 141

Aim

At the Hokkaido University of Education, “Kinderplatz” is being developed as support for inclusive free play. During the “Kinderplatz” activities, the supporters do not intervene in the children’s activities in any way, including giving them instructions. In contrast, in physical education classes, the supporters teach and intervene in children’s activities. The purpose of this study was to examine the effects of physical activity settings and supporters’ involvement on the amount and content of physical activity using a case study of a child with Autism Spectrum Disorder (ASD).

Methods

The participant was a child with intellectual disabilities and ASD who had participated in “Kinderplatz” since 2016. His current age is 11 years and 12 months. In this study, the child’s participation in the activity of “Kinderplatz” on January 23, 2021, was recorded and observed. In addition, for comparison, his participation in the “Ball exercise program” on December 26, 2020 was recorded and observed. The amount of activity was analyzed using an activity meter (Omron HJA-750c Active style Pro). It was equipped with a 3-dimensional acceleration sensor and recorded physical activity data (Mets) by identifying walking and daily life activities every 10 seconds. For the measurement, the device was attached to the left hip of the participant with a special clip. The measured physical activity was categorized into static activity (1–1.5 Mets), low-intensity activity (1.6–2.9 Mets), medium- intensity activity (3.0–5.9 Mets), and high-intensity activity (> 6 Mets). As the analysis time was different, the percentage of frequency distribution was calculated.

Results and Discussion

There was a difference in the amount of activity between the free play and exercise instruction situations. The percentages of activity in the free play situations were 15.4% for static activity, 38.0% for low-intensity activity, 22.2% for medium-intensity activity, and 24.4% for high-intensity activity. In addition, the amount of activity shifted rapidly. In contrast, the percentages of activity in the exercise instruction situations were 9.4% for static activity, 38.0% for low-intensity activity, 44.6% for medium-intensity activity, and 8.0% for high-intensity activity. The program consisted of an explanation of the ball exercise, preparatory exercise, passing practice, dribbling practice, and a game, with the supporters taking the lead. In addition, the amount of activity shifted slowly. The study results suggested that in the “Kinderplatz” activity, participants could adjust the content and time allocation of the free play situation at their own pace.

Keywords: Inclusive Free Play

# LOW MUSCLE STRENGTH, HIGH BODY MASS INDEX, AND LOW BONE DENSITY AMONG ADULT SPECIAL OLYMPICS ATHLETES IN THE UNITED STATES

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Abstract ID: 44

Adults with intellectual disabilities (ID) have increasing life expectancy, but a large-scale analysis of the presence of aging-related conditions in adults with ID is absent in the literature. Thus, the purpose of this study is to examine the associations between the presence of low muscle strength, high body mass index (BMI), and low bone mineral density (BMD) with age and sex in adult Special Olympics athletes from the United States. Data were collected during 2018-2019 from US male and female Special Olympics athletes, ≥20 years old, with diagnosed ID (n = 14,137; 42.4% female). Grip strength (n = 6,477; 40.9% female), chair stand time (n = 6,444; 40.5% female), BMI (n = 7,840; 43.7% female), and BMD (n = 3,091; 43.2% female) measurements were provided from the Special Olympics International Healthy Athletes system.

Binary logistic regression analyses were performed to examine associations between age (banded by decades) and sex (male and female) with low grip strength, high chair stand time, high BMI, or low BMD based on established cut-points for sarcopenia, obesity, and osteopenia. Low grip strength, high chair stand time, high BMI, and low BMD were identified in 43.8%, 46.2%, 50.1%, and 28.7% of each sample, respectively. Males were significantly more likely than females to exhibit low grip strength (OR = 1.88, 95% CI = 1.70 – 2.08) and low BMD (OR = 1.27, 95% CI = 1.08 – 1.49) and significantly less likely to have high chair stand time (OR = 0.88, 95% CI = 0.80 – 0.97) and high BMI (OR = 0.56, 95% CI = 0.51 – 0.61). Odds ratios for all four outcomes increased with age, suggesting greater risk. Concerningly high prevalence of low grip strength, high chair stand time, high BMI, and low BMD were observed among the sample; indicating disparities in muscle, fat, and bone health. Males had a higher likelihood of low grip strength and low BMD, while females were more likely to exhibit high BMI and high chair stand time. Increasing age was a significant predictor for all four outcomes in this sample. The presence of low muscle strength, high BMI, and/or low BMD can result in increased risk of falls and decreased mobility, independence, and quality of life for affected individuals, particularly with age.

Given that the sample was exclusively Special Olympics athletes, it is unclear whether these findings may be generalized to the rest of the adult population with ID. Early intervention toward modifiable risk factors for these conditions may be warranted in the adult Special Olympian population with ID.

Keywords: Intellectual Disability, Special Olympics, Muscular Strength, Obesity, Bone Health

# DEVELOPMENT AND EVALUATION OF A CHAIR-BASED YOGA PROGRAM FOR ADULTS WITH NEURODISABILITY

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Abstract ID: 228

Aim

The human rights movement associated with the Convention on the Rights of Persons with Disabilities obligates service-providers to address barriers to participation and provide inclusive access to such services where reasonably possible. This study focuses on exploring the feasibility and the effects of practicing chair-based yoga for 10 weeks on health-related quality of life (HRQoL) and interoceptive body awareness (BA) in adults with neurodisability and moderate to severe physical dependence.

Methods

A pre- and post-testing control group design was followed. Participants were 34 service users at a rehabilitation center. The intervention group (IG, n = 17, 53% men, mean age of 48.6 ± 11.4 years) took part in the 10-week chair-based yoga program. The control group (CG, n = 17, 53% men, mean age of 53.1 ± 11.0 years) received usual care. The outcome measures were feasibility (recruitment rate, attrition, completion rate, adherence, participation, safety and tolerability), HRQoL (WHOQoL-BREF questionnaire), and BA (the Multidimensional Assessment of Interoceptive Awareness, MAIA). Participants in the IG completed a questionnaire to measure their personal experience of participating in the program.

Results

This study provides implications for a 10-week chair-based yoga program as a feasible, well-tolerated, and safe intervention, reinforced by the participants' retrospective judgment. Compared to the CG, the program produced statistically significant improvements over BA, such as subscales of MAIA Noticing ($p = .031$, Hedges $gs = 0.76$), Emotional Awareness ($p < .001$, Hedges $gs = 1.68$), and Trusting ($p = .036$, Hedges $gs = 0.74$), but not HRQoL, for the IG.

Conclusions

A 10-week chair-based yoga intervention was shown to be a feasible, well-tolerated, and safe therapy which allowed people of varying abilities to participate equitable. Chair-based yoga can help people with moderate to severe physical dependence due to neurodisability to improve their interoceptive body awareness. Moreover, chair-based yoga does not have a significant impact on the HRQoL of this sample of participants. We believe that our findings emphasize the need for specially-tailored programs for adults with significant motor loss, which provide the most appropriate mind–body intervention for the situation at hand, that lead to improved overall health and encourage a sense of personal choice and independence for people with moderate to severe physical dependence due to neurodisability. Compared with other disability groups, this population experiences more barriers to physical activity participation and social activities despite having more to gain by way of maintaining functioning and preventing common secondary conditions. In order to provide the best possible care, further research is needed to determine which types of mind-body therapies provide the greatest wellbeing outcomes for people affected by neurodisability, in particular those who use a wheelchair.

Keywords: Mobility impairment; Mind-body therapy; Feasibility; Quality of life; Interoceptive body awareness

# GENE THERAPY FOR AROMATIC L-AMINO ACID DECARBOXYLASE DEFICIENCY AND MOTOR IMPROVEMENT

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Abstract ID: 240

Aim

Aromatic L-amino acid decarboxylase (AADC) deficiency is a rare genetic disorder that occurs at dopamine and serotonin synthesis. Causes severe motor, cognitive, behavioral, and autonomic disability. We investigated the efficacy of delivery of a viral vector expressing AADC (AAV2-hAADC) to the midbrain in a child with AADC deficiency in motor function.

Methods

One (1) child, aged 5 years underwent convection-enhanced delivery (CED) of AAV2-hAADC to the bilateral substantia nigra (SN) and ventral tegmental area (VTA) (total infusion volume: 80 µL per hemisphere) in 2 dose cohorts: 1.3 x 1011 vg (n=3), and 4.2 x 1011 vg (n=4). The child was treated at The Ohio State University, the Gross Motor Function Measure (GMFM-88) was applied at baseline, three, six, and 18 months follow-up.

Results

Using real-time MR imaging, we were able to confirm the accurate placement of the infusion catheter at each target (bilateral SNc and VTA) for the child. Gross motor function was evaluated using the GMFM-88, a standardized instrument designed to assess changes in motor function over time in children with motor impairment due to cerebral palsy. The total score, which ranges from 0-100 percentage points, is derived as an unweighted average of scores in 5 dimensions (lying & rolling; sitting; crawling & kneeling; standing; and walking, running, & jumping). The GMFM-88 was selected for this study as a tool to assess motor function because it was developed to assess children with motor impairment due to an insult to the developing brain early in life (cerebral palsy), as occurs in AADC deficiency, and because the GMFM-88 can accurately test and measure a change in children with very low gross motor function. The child achieved recognizable gains in motor function after the procedure, manifested by increased tone and improvements in head and trunk control, and purposeful limb movements. The child in this study was able to express her abilities in two GMFM dimensions lying & rolling and sitting. At baseline, the percentage was 1.96% and 0%, 3 months follow up 21.57% and 8.33%, 6 months follow up 43.13%, and 11.66%, 18 months follow up 63% and 43%, respectively for lying & rolling and sitting.

Conclusions

In the GMFM-88 we were able to identify improvement at head control, rolling, flexes right and left hip and knee through the full range, reach and grasp, and Independent sitting. Midbrain gene delivery in children with AADC deficiency is feasible and safe and leads to substantial clinical improvements in motor function.

Keywords: AADC, motor improvement and gene therapy

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# INCLUSION IN SCHOOL PHYSICAL EDUCATION: THE PERSPECTIVE OF PEOPLE WITH DISABILITY

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Abstract ID: 217

Aim

The inclusion of people with disability in the school Physical Education has been the subject of study of several researches in the past years. Assessing how it has been happening is relevant for the area and to be aware of what strategies to adopt. This abstract shows the initial stage of a research aiming to understand the perception of people with disability in the school Physical Education, considering their participation in class, and their relation with classmates and teachers. It is possible, through the participants' statements, to rethink practices to provide a more inclusive environment.

Methods

This research is characterized as qualitative. The semi-structured interview was used for data collection, and, after transcribed, it was analyzed through content analysis. The population was selected by convenience and has been composed, up to now, of three men with motor impairments who attended regular schools and took part in Physical Education classes. Two of the participants were 44 years old and the third participant was 24 years old. The investigation happened in the state of Mato Grosso do Sul, Brazil.

Results

The interviewees mentioned that they enjoyed taking part in Physical Education classes, but two of them said that they did not participate actively, since the activities were not appropriate for an effective participation. In accordance to their age, they went to school mainly in the 1980s, when the inclusive movement had not been established in Brazil. The participant who attended school in the 2000s, had classes where the teacher used adapted activities for his participation, following more inclusive actions. They all presented a good relation with their teacher and classmates. However, the two participants who attended school in 1980s and were not able to take part in every activity, they did not interact so much during the classes. Answers diverged when they were asked about what they would change in their classes. The propositions involved teaching issues such as adaption of activities that can in fact be done by students with disability and teacher professional development focused on inclusive education. The second proposition was about legal actions associated to the fulfillment of the inclusion through national legislation in force, which increase the opportunities for students with disability.

Conclusions

The results point to a convergence in the perception of the moment lived by the participants under the perspective of the inclusive movement, i.e., there is the perception of change in the situation of effective participation with the development of the inclusion process of people with disability in school Physical Education classes in Brazil. This study needs to be concluded so that this analysis cannot be extended, but it already shows changes in the participation, and it indicates new demands for broadening the inclusion.

Keywords: Inclusion, School physical education, People with disability

# COVIDENCE AS A TOOL TO A SYSTEMATIC REVIEW: EXERGAMES, CHILDREN, NEURODEVELOPMENTAL DISORDERS AND OUTCOMES

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Abstract ID: 222

Aim

A systematic review is a methodological strategy used by researchers from different areas of knowledge, which requires a rigid and clear methodological protocol to be able to replicate the research. There are tools that support validity and reliability from the systematic reviews, such as Covidence. The aim of this study is to apply Covidence as a tool for a systematic review to verify the benefits of exergames at selective attention and motor development in children with neurodevelopmental disorders.

Methods

Covidence is being used for the systematic review with the research question, “What are the effects of using exergames on motor behavior and selective attention of children with ASD or ADHD”. After selecting the keywords, we completed the search using PubMed, Embase, BVS, Scopus, Web of Science, Cinahl, Cochrane, PsycInfo, SportDiscus, Eric, and Scielo databases. Then we saved the returned references as "RIS" files that Covidence can read. Finally, we uploaded the references to Covidence.

Results

Covidence was used to manage the systematic review. When the articles were uploaded to Covidence, we had a total of 3597 articles and automatically Covidence extracted 704 duplicates. The next steps will be A) Screening by title and abstract by two reviewers B) Full-text review by two reviewers and C) Data extraction. Also, Covidence generated a PRISMA chart with all information about the screening process.

Conclusions

Covidence provides an interactive option to do the systematic review in a flexible, intuitive, and streamlined way. The interface is intentionally designed to guide the researchers in the review process. Users can invite other reviewers to collaborate, import references, "title" and "abstract screening" as simple as clicking "yes", "no" or "maybe", get a summary of conflicts to manage and make final decisions faster; after decisions are made studies move into full text screening, and when the review is read for the extraction portion, users can create a template from scratch or choose from Covidence sample templates. Also, Covidence has tools such as webinars to help researchers learn to use this tool. In addition, researchers can use Covidence to manage day-to-day database searches, using Covidence to store, screen and organize references for future consultation.

Keywords: Review. Research methods. Covidence.

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# IMPACT OF POWER SOCCER PARTICIPATION ON ACUTE AND CHRONIC PAIN

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Abstract ID: 230

Aim

Pain experienced by individuals with disabilities varies depending on diagnosis and impairment. Power soccer is a sport designed for individuals with severe physical impairments whose pain may be a barrier to physical activity (e.g., spinal cord injury, cerebral palsy, amputation). The purpose of this study was to examine players' perception of power soccer participation on their acute and chronic pain.

Methods

Structured interviews of 20-60 minutes were completed on 22 power soccer players. Participants ranged in age from 18 to 44 years and reported diagnoses of arthrogryposis, cerebral palsy, spinal muscular atrophy, muscular dystrophy, multiple sclerosis, and spinal cord injury. Interviews were transcribed and sent to participants for review. Theme analyses were completed and then evaluated within each impairment group. Inclusion criteria included power soccer team membership and exclusion criteria included manual wheelchair eligibility. IRB approval and informed consent were collected prior to the study.

Results

The primary findings from this study were that acute pain was most associated with collisions with other players and extended sitting in gameplay positions (postural pain). Acute pain was also most noticeable during tournaments are players reported mental and physical fatigue following gameplay. Fortunately, players did not perceive that power soccer participation contributed to chronic pain.

Discussion

The purpose of this study was to identify the effect power soccer has on pain. Findings demonstrated that acute pain is exacerbated after play by the collision of chairs during match play as well as positioning in the chair, but it does not limit their ability to play the sport. Additionally, athletes achieve physical activity without exacerbating chronic symptoms such as fatigue, making power soccer a viable sport for long-term participation. To increase access to the sport, healthcare professionals should coordinate with local community-based adaptive sports programs to provide an avenue for lifelong quality of life and physical activity opportunities.

# STIMULATING BABIES WITH DOWN SYNDROME IN A SWIMMING PROGRAM

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Abstract ID: 238

Aim

Considering current knowledge about the benefits that swimming for babies can provide at this stage of human development and understanding that swimming lessons in a pool can help babies with Down syndrome to reach their best development potential, this study aims to verify the effect of a swimming stimulation program on the development of babies with Down syndrome.

Method

Quasi-experimental research (AB) was carried out with two babies who have Down syndrome. These two participants are part of the Extension Project called “Physical, Sports and Leisure Activities Adapted to People with Disabilities” (PROAFA/UFSCar - Brazil). They are of both genders and aged between 23 and 33 months. As a data collection instrument, a Protocol for Analyzing Baby Development in the Liquid Environment, developed by the authors, was used. In the Protocol were described in each of the 18 items, the behaviors to be evaluated in the babies in each of the moments of the classes, describing from their absence to the expected performance of it, with or without physical assistance. After the initial evaluation, an intervention period (swimming lessons for babies), lasting fifteen weeks was carried out, in which a total of twenty-seven sessions, held twice a week, lasting forty-five minutes each. All evaluations and intervention sessions were systematically video recorded. The data obtained from the pre- and post-intervention periods, using the instrument in question, were analyzed by three researchers/observers, to verify the agreement between the data and ensure its reliability. A qualitative analysis of the performance of each of the babies was performed, comparing the data obtained in the pre- and post-tests, to verify the possible changes presented by the participants after the intervention.

Results

The individual analysis showed that the babies showed positive changes after the intervention period. Baby A made progress in 13 out of the 18 elements analyzed; baby B made progress in 9 out of the 18 elements assessed. The evaluation of babies according to the protocol showed evolution in six common aspects: reaction at the poolside, interaction with the instructor, joint mobility, movement of arms and legs, changes in decubitus, and diving. Baby A showed progress in seven other specific elements: reaction after entering the pool, notion of body schema, reaction to visual and tactile-kinesthetic stimuli, grabbing objects, postural control (sitting and standing posture). Baby B showed progress in three other specific aspects: respiratory domain in the liquid environment, reaction to auditory stimuli, and communication.

Conclusions

After obtaining positive results and evolution in the evaluated aspects, it is considered that the swimming stimulation program had a positive influence on various aspects of the development of babies with Down syndrome who participated in the study.

Keywords: Swimming, Baby, Down Syndrome

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# MULTIDIMENSIONAL BALANCE DIFFERENTIALLY ASSOCIATES WITH MAXIMAL HANDGRIP AND ESTIMATED CARDIORESPIRATORY FITNESS IN YOUTH WITH VISUAL IMPAIRMENTS

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Abstract ID: 131

Aim

Balance is a complex and pluralistic motor skill. Pennell (2020) recently hypothesized a model which posited that balance may (in)directly influence movement- and health-promoting outcomes (e.g., health-related fitness [HRF]). Youth with visual impairments (VI) tend to have decreased HRF (e.g., cardiorespiratory endurance) and motor-related (e.g., balance) performance. Thus, preliminary investigations into the interplay between balance and certain HRF measures in youth with VI are warranted as balance may operate as a mechanism of influence/action for such outcomes. The purpose of this study was to investigate for associations between a multidimensional balance assessment and two forms of HRF (i.e., cardiorespiratory fitness; muscular strength) in youth with VI.

Methods

This study was a secondary analysis of data collected in 2017 at two summer camps located in the eastern United States for youth with VI (n=62, Mage=13.26y, SD=2.23y). All participants completed the Brief-Balance Evaluation Systems Test (Brief-BESTest) as well as muscular strength (i.e., maximum handgrip; kg) and cardiorespiratory fitness (i.e., PACER) tests. Participants were asked to maximally grip a Jamar hydraulic hand dynamometer (three trials per arm, alternating arms) while standing and elbow flexed at 90˚. The largest grip value of all trials was used for analysis. Raw PACER scores were transformed into estimated VO2max values (mL/kg/min) using the age-based prediction equation introduced by Mahar et al. (2018). Spearman correlation coefficients (ρ) were calculated between total- and item-level Brief-BESTest scores, maximal grip, and estimated VO2max values.

Results

Mean total Brief-BESTest score, maximal grip, and estimated VO2max values were 15.90 (SD=3.35), 18.92 kg (SD=9.26), and 34.67 mL/kg/min (SD=5.68), respectively. Total Brief-BESTest scores associated with maximal grip strength (ρ=.32, P≤.01, 95% CI=.08-.53). Concerning the item-specific scores of the Brief-BESTest, maximal grip strength was associated with reactive compensatory stepping to the right side (ρ=.33, P≤.01, 95% CI=.09-.53), hip lateral strength (ρ=.26, P≤.05, 95% CI=.02-.48), and right-leg unipedal stance (ρ=.27, P≤.05, 95% CI=.02-.48). Estimated VO2max values were associated with the timed up and go test (ρ=.46, P≤.001, 95% CI=.23-.63) and left-leg unipedal stance (ρ=.30, P≤.05, 95% CI=.05-.51). The association between estimated VO2max and total Brief-BESTest values trended toward significance (ρ=.24, P>.05, 95% CI=-.005-.47). Discussion/

Conclusions

This preliminary analysis suggests that there may be associations between balance, maximal grip strength, and estimated VO2max values in youth with VI. This is an important finding as balance enables all goal-directed movements and therefore, may influence HRF. As delineated by Pennell's (2020) model, multidimensional balance should be investigated as a health-influencing mechanism of influence/action in youth with VI.

Keywords: muscular strength, blind, postural control, health-related, cardiovascular

# SELF-DETERMINATION THEORY AND AN AFFINITY-BASED APPROACH TO PHYSICAL ACTIVITY PROGRAMMING FOR YOUNG ADULTS WITH ASD

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Abstract ID: 225

Autism Spectrum Disorder (ASD) is among the most commonly diagnosed disabilities with the U.S. Centers of Disease Control and Prevention (CDC) reporting 1 in 54 children and adolescents are diagnosed with ASD (CDC, 2020). While social, communication and behavioral deficits in those with ASD is well known, it may be surprising to know that many with ASD fall short of nationally recommended physical activity levels (Bandini et al., 2013; MacDonald, Esposito & Ulrich, 2011). In addition, research has found that adolescents and young adults with ASD spend significantly more time in sedentary pursuits compared to peers without ASD (McCoy, Jakicic, & Gibbs, 2016; Must et al., 2014). Is there a way to motivate young adults with ASD to start and then adhere to a regular physical activity program?

The purpose of this presentation is to suggest a model that combines self-determination theory (SDT) and an affinity-based approach (using the child's interests) to create an individualized physical activity program that will help motivate young adults with ASD to regularly participate in physical activity programs.

SDT suggests that people are driven to engage in activities to fulfill their need for autonomy, relatedness, and competence, and that environments that support these three needs help people to become motivated to begin and continue in selected activities (Deci & Ryan, 2012; Wehmeyer, 2019). Autonomy describes the drive people have to be able to make choices and act voluntarily. Competence refers to the motivation to be successful within environments. Relatedness is the sense of connectedness and belonging with others (Deci and Ryan 2004). SDT has been suggested as way of exploring motivation to exercise (e.g., Chatzisarantis & Hagger, 2009; Duncan et al., 2010), and others have suggested that SDT is appropriate model to apply to help those with ASD to become more independent and motivated to participate in various activities (e.g., Cheak-Zamora (2019; Wehmeyer et al., 2010). However, there has not been an effort to utilize SDT to create physical activity programs for young adults with ASD. Additionally, the use of affinities as part of the physical activity intervention model has not been explored.

This presentation will outline a model that builds autonomy, competence and relatedness into the creation of individualized physical activity programs for young adults with ASD as well as utilizing each individual's affinities as a means of providing motivation to start and adhere to a physical activity program.

Keywords: physical activity, autism spectrum disorder, self-determination theory

# PARALYMPIC SPORT IN CHILE, AN APPROACH TO NATIONAL REALITY IN THE YEAR 2019

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Abstract ID: 23

This study seeks to know which is the reality of Paralympic sport in Chile and the difficulties in implementing and developing it.

For the present article, a descriptive non-experimental design and methodology of the phenomenon to be studied was used, where the qualitative paradigm tools, particularly the technique of focus groups or discussion and analysis, were mainly used to collect and analyze the information.

The results indicate that there is a low state/government commitment to the work of physical activity and Paralympic sport, that the Paralympic sports law is not sufficient for sports development in general, that financial and human resources are insufficient. The distribution of these is inadequate at the state and local levels that there is difficulty in accessibility in sports venues, and in turn in transport and connectivity, that professional and technical training is insufficient, and finally that the Research and applied sciences are insufficient and of low quality, with few processes of study and scientific application at the national level.

Keywords: disability, paralympics, inclusion, sport

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# EMPLOYMENT AND EDUCATION STATUS RELATED TO SEDENTARY BEHAVIOR BUT NOT PHYSICAL ACTIVITY IN YOUNG ADULTS WITH AUTISM

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Abstract ID: 59

Aim

Adults with autism are more at risk for cardiovascular disease, and having an increased occurrence of obesity and hypertension compared to their neurotypical (NT) counterparts. Consequently, autistic adults engage in less physical activity (PA) and have higher levels of sedentary behavior (SB) (i.e., engaged in sitting or lying), compared to NT adults, which negatively impacts cardiovascular health. To help reduce the disparities in PA and SB among adults with autism, a focus on these health behaviors during young adulthood (ages 18 to 35 years) is of particular importance. Employment, among NT adults, is associated with increasing odds of meeting sedentary behavior guidelines. Although it is well known that adults with autism are more likely to be unemployed and not in post-secondary education, the relationship between education and employment status and health behaviors among this population is unstudied. Therefore, the purpose of this study is to examine how post-secondary education and employment status is associated with levels of PA and SB in young (18 – 35 yrs) adults with autism in the United States (US).

Methods

Data were collected using an electronic survey querying PA and SB in a US sample of adults with autism. The International Physical Activity Questionnaire-Short Form (IPAQ-SF) was used to assess PA levels and the Sedentary Behavior Questionnaire (SBQ) was used to assess time spent in SB. Separate logistic regression models of meeting PA (define) and SB (define) guidelines were generated with post-secondary education (variable levels) and employment status (variable levels) entered as key independent variables. Age, gender, race, independence in activities of daily living (ADLs), living situation, and previous educational attainment were included as covariates.

Results

The survey was completed by 273 adults with autism (59.9% male, 18% in education, 30% in paid employment). With adults with autism not currently in education or employed as the reference group in regression models, our data showed that respondents who were employed with support + not in education were ~5 times more likely to meet the SB guideline (eβ=4.97, 95% CI=2.05-12.64), while those employed without support + not in education were ~4 times more likely to meet the SB guideline (eβ=4.28, 95% CI=1.53-12.8). Adults with autism who were in education and employed, regardless of support, were less likely to meet the SB guideline (EWH: eβ=1.324, 95% CI=0.002-0.157; EWOH: eβ=1.369, CI=0.001-0.165). Employment and education status were not associated with meeting PA guidelines.

Discussion

Being employed may be beneficial, while being employed and in education may be detrimental, to meeting SB guidelines in adults with autism, even after adjusting for ADLs. Reduced SB may be another mechanism through which employment benefits adults with autism.

Keywords: Autism, Young Adults, Employment, Education, Physical Activity

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# HOW A SCHOOL ECOLOGY PERCEIVES AND EXPERIENCES AN AUGMENTED PHYSICAL EDUCATION PROGRAM WHICH ENROLLS STUDENTS WITH AND WITHOUT DISABILITIES

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Abstract ID: 244

Aim

Every human has the right to live freely with equity and dignity. Within equitable and dignified environments, the role of inclusion must be consulted. The school is a critical venue where students can be immersed in an inclusive culture. The purpose of this study is to describe the perceptions and experience of students, paraprofessionals, administrators, a cafeteria aide, a caregiver, general classroom teachers, special education teachers, and a PE teacher during the implementation of an augmented PE program, to determine what influence an augmented PE program may have on themselves and the school. For this research, the word augmented will be defined as “made more complete.” In this study, the augmented PE program is a program named Unified Wellness (UW) which is a program that brings students with and without disabilities together in the same course.

Methods

This research is based on an exploratory case study design, which gives prominence to interviewing as a primary technique for data collection. The goal of this methodology is to explore how/what phenomena are occurring. I have bound my study in perceptions of several actors within one secondary school in Northern New England.

Results/Discussion

Three major themes emerged, along with eight sub-themes. The themes were: 1. Nurturing of a Program (planting the seed; all-encompassing; behind the scenes; and branches of Unified), 2. Rooted Behavior and Relationships (spillover; and friendship) and 3. Turning a New Leaf (reflection; and personal growth). The emergence of a new model of an inclusive environment’s spillover to the whole school was inductively derived from the findings of this research and depicts a systematic cascade of inclusive behavior within a school. This emergent model diverts from a medical model of disability and celebrates a social model of disability. Specifically, this model recognizes individuals with disabilities are not limited by their disability, but rather that society restricts an individual with disabilities from fully participating in activities. This is in contrast to a medical model of disability where the restriction of the individual to fully participate in activities falls onto their disability. Summary/

Conclusions

Participants perpetually referred to the social environment surrounding UW and highlighted the key role of a ‘quarterback’ to champion the establishment and sustainment of an augmented PE program to assure its success and longevity. All participants reported varying levels of personal growth, some more profound than others. This exploration of a school’s take of an augmented PE program, which enrolls students with and without disabilities in the same learning environment, is not a recipe or a ‘paint by numbers’ process to create and carry forth a program akin to UW. Rather, this study offers insights into how several actors in the school perceive and experience the realities of conducting such an endeavor.

Keywords: Inclusion, Disability, Physical Education

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# ASIAN PARENTS' PERCEPTIONS OF ADAPTED PHYSICAL EDUCATION SERVICES

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Abstract ID: 236

Aim

Parents' perceptions may be viewed through a narrow lens that could possibly be impacted by cultural context, personal beliefs, limited knowledge, and lack of awareness of educational services (Jeong, Kim, & Lee, 2015; Lee & Park, 2016). School personnel and parents lack the development of a partnership to determine how resources for students with a disability can be effectively utilized for programming (An & Hodge, 2013; Hamlin & Flessa, 2018; Lee, Dillon, & Stewart, 2019). This study aimed to identify immigrant Asian parents' perceptions on adapted physical education services delivered to their children with disabilities in school environments.

Methods

This study utilized a qualitative research design (Creswell, 2013) approved by an institutional review board and participant consent. Participants were fifteen immigrant parents with a child with a disability receiving direct services (including adapted physical education) at an educational institution and were recruited from a community-based parent support program. The investigators utilized a bilingual semi-structured questionnaire, which consisted of open-ended questions and validated by experts for content validity. An interpreter was used to certify the full understanding of the parents' written explanations, when necessary. Content validity was supported with field notes taken by the investigators during each interview.

Results

The semi-structured questionnaire, analysis, and field note depiction led to identifying four major themes as participants consistently expressed perceptions within these broader categories. These four themes consisted of 1) the lack of understanding about parents' cultural differences, 2) the lack of goal setting for the adapted physical education curriculum, 3) limited knowledge of parental rights, and 4) noted barriers to services experienced.

Conclusion

The study examined the importance of immigrant Asian parents' perceptions of direct school services for their children with disabilities. It is important to understand that special education services can be perceived differently based on specific cultural beliefs. This research has provided an opportunity to better understand cultural perspectives and provided necessary recommendations to bridge the gap that may exist between an educational institution culture and Asian parent culture regarding special education services. These recommendations consist of forming collaborative partnerships in schools, providing direct support for parents to continue advocating for their children, increasing the need for school personnel to understand the Asian culture, and enhancing parental training (e.g., policies and practices of special education) through the educational system. Continued research should be conducted to broaden the scope of goals to overcome perceived barriers within any culture for children with disabilities to perhaps increase the quality of their movements and daily life activities.

Keywords: adapted physical education, parents, perceptions

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# THE CONCURRENT AND PREDICTIVE VALIDITY OF A TOOL TO MEASURE STRENGTH ENGAGEMENT DURING INCLUSIVE EQUESTRIAN VAULTING

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Abstract ID: 15

Aim

Participation in muscle strengthening activities is a less examined component of public health physical activity guidelines for children and youth. In part, this relates to the feasibility of measuring engagement in strength activities during participation. The Strength Observation during Vaulting (SOV) tool was developed by documenting inclusive equestrian vaulting camp activities from video, applying functional anatomy principles to those activities, and collaborating with expert vaulting coaches. Consensus between the experts and the research team led to the creation the SOV tool, which measures strength engagement during floor-work, barrel and horse vaulting, and stable chores on 5-point ordinal scale. Our aim was to provide evidence of the concurrent and predictive validity of the SOV tool.

Methods

Six female youth (Mean age=14.2y, SD=4.0) participating in a 5-day inclusive equestrian vaulting camp were recruited. All had prior vaulting experience (Mean=1.8y, SD=0.8) and four had a disability. Participants completed three measures of strength and video of each participant engaging in camp activities was coded using the System for Observing Fitness Instruction Time (SOFIT) and SOV tools for two days. Hand-grip strength in kilograms was measured using the Takei Hand Grip Dynamometer. The number of push-ups and curl-ups completed in accordance with the Brockport Physical Fitness Test procedures were recorded. To provide an indication of predictive validity, we used linear regression to examine whether the strength measures predicted time spent in the most demanding levels of strength (i.e., SOV levels 4 and 5). Concurrent validity was examined by computing bivariate correlation coefficients between time spent in moderate-vigorous physical activity (MVPA) from SOFIT and time spent in SOV levels 4 and 5.

Results

On average, the participants' strength scores were 20.5kg (SD=5.1) for grip strength, 10.2 (SD=7.8) for push-ups, and 23.3 (SD=25.8) for curl-ups. Mean time spent in MVPA was 72.2 min (SD=26.5) and 27.4 min (SD=11.9) in SOV levels 4 and 5. The linear regression model was significant P=.020, with the three measures of strength accounting for 98.7% of the shared variance with time spent in SOV levels 4 and 5. Bivariate correlation coefficients comparing SOV levels 4 and 5 and MVPA were r=.73 for all contexts, r=.89 for floor-work, r=.64 for barrel vaulting, r=.76 for horse vaulting, and r=.81 for stable chores.

Conclusions

The predictive and concurrent validity of the SOV tool were more than adequate. The findings provide confidence that systematic observation is a feasible approach to assess engagement in strength activities during a dynamic vaulting camp. This is a fundamental step in being able to demonstrate that participation in inclusive equestrian vaulting may provide physical health benefits such as improved strength, an important component of health-related fitness for youth with and without a disability.

Keywords: Muscular strength, Equestrian Vaulting, Community Collaboration, Children, Inclusion

# PARALYMPIC SPORT IN SCHOOL: AN INVESTIGATION ON THE INCLUSION OF THE STUDENT WITH DISABILITY IN PHYSICAL EDUCATION CLASSES

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Abstract ID: 31

Aim

Although assured by specific laws in different countries, the inclusion of students with disabilities (SWD) in general schools is challenging. The SWD struggle to participate in Physical Education (PE) classes and to have a meaningful learning. During a PE class mainly based on competitive sport practices, questions have been raised on the nature of its curriculum and its educational value for SWD. The objective of this study was to investigate the Paralympic sport in PE classes as a means for inclusion of SWD, exploring the perspectives of PE teachers and their students (with and without disabilities).

Methods

This is a case study with qualitative design and exploratory character developed in public schools with the participation of three groups of participants: 1) PE teachers; 2) SWD; and 3) students without disabilities. Paralympic sport was introduced in PE classes through an 8-class program, with two Paralympic sports for all students. The focus group interview and semi-structured interview instruments were applied before and after the module on Paralympic sport. All the interviews' transcripts were analyzed using the content analysis technique, categorized by themes.

Results

The data generated revealed that before intervention, PE classes were grounded on traditional sports, recognized as a place to physical performance and ability achievement. SWD, who were identified as incapable and excluded, were thought not to belong to PE class. After the Paralympic sport module, the study participants revealed a change in perspective regarding the exclusion of SWD, questioning their exclusion and supporting their participation in classes. Paralympic sport classes were described as a possibility to including SWD in classes with the participation of all. Beliefs regarding the ability of SWD also changed throughout the intervention process, who were no longer seen as incapable. In the educational and curricular dimension of PE classes, the difficulties mentioned are deeply associated with PE culture, grounded over ableist values through the traditional sports.

Discussion

The inclusion of SWD seems to focus on how the SWD can fit in the classroom, and not the opposite. However, promoting inclusion in PE classes seems a continuous challenging process, demanding not only adaptations to teaching strategies and materials, but changes on what we understand about PE and disability.

Keywords: Physical Education. Student with disability. Paralympic Sport. Disability. School

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# CERTIFIED PERSONAL TRAINERS' PERCEPTIONS OF THE OUTCOME EXPECTATIONS AND SOCIO-STRUCTURAL FACTORS INFLUENCING PERSONAL TRAINING OF ADULTS WITH INTELLECTUAL DISABILITY IN A COMMUNITY FITNESS FACILITY

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Abstract ID: 235

Aim

Numerous barriers limit the participation of adults with an intellectual disability (ID) in community fitness facilities (CFFs). Lack of disability-related certification requirements for personal trainers (PTs) highlights the need to revise certification standards worldwide and develop training modules that prepare PTs to provide individualized training for individuals with ID. Therefore, insights from PTs are needed. The Social Cognitive Theory was used to explore PTs' perceptions of outcome expectations and socio-structural factors influencing providing personal training for a hypothetical adult with ID in a CFF.

Methods

Participants were a convenience sample of 11 certified PTs (6 women), ages 21-65 years (M = 43±14), currently employed at a CFF in the United States (North Carolina, Georgia, Indiana, Pennsylvania, and Delaware). An online demographic/background questionnaire and a Zoom-based 90-min interview were used. Interviews were supplemented with PowerPoint questions. Qualitative data were analysed by two independent investigators using directed content analysis. Interrater reliability was calculated using Cohen's Kappa, which yielded agreement ($p < .001$) ranging from 0.89-1.00.

Results

Of the 11 participants, 64% had a Master's degree, 27% a Bachelor's degree, and 9% a high-school diploma. The most frequently cited benefits of providing personal training for Ryan (a hypothetical adult with ID) were the PT being better at their profession; the PT helping Ryan make progress on her/his goals, mainly physical fitness, performance, and knowledge; and the PT feeling accomplished/fulfilled. The costs mostly pertained to the PT not knowing how to create an exercise plan or adapt exercises/instruction for Ryan, the PT worrying about physically hurting or causing distress to Ryan, and the PT needing to devote extra time and energy to work with Ryan. The most frequently cited facilitators were the CFF providing/having appropriate equipment/tools/space to work with Ryan, and the PT having proper training or knowledge on how to provide personal training for Ryan. Barriers mostly included the CFF lacking adapted/appropriate equipment/tools/space to work with Ryan, the PT lacking training on how to work with Ryan, Ryan struggling behaviourally, and the CFF being distractive/noisy/crowded.

Conclusions

Consistent with our previous study, this qualitative study confirmed certified PTs lack the resources, training, and time to adequately provide personal training for an adult with ID in a CFF. This poster will break the elicited factors based on five exercise areas (i.e., aerobic exercises, machines, free weights, core exercises, and stretching). The findings have value when designing professional development curricula for PTs.

Keywords: Barriers; Facilitators; Fitness facility; Intellectual disability; Outcome expectations; Personal trainer; Social Cognitive Theory

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# FEMALE ADOLESCENTS' EXPERIENCES IN A MULTI-SPORT PARASPORT PROGRAM

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Abstract ID: 49

Aim

A key barrier influencing sport participation for adolescents who experience disability is a lack of meaningful and appropriate programs. What makes a program meaningful or appropriate is determined subjectively by each individual. Therefore, understanding experiences from participants' perspectives is important for understanding participation. The purpose of this study was to explore the perspectives of adolescents on i) their introductory experiences in a parasport program, ii) the factors that influenced the quality of their participation, and iii) how participation in the program impacted them.

Methods

This phenomenological study used purposeful sampling to recruit three girls, aged 11, 15, and 15, who had previously participated in a congregated parasport program for youth with physical disabilities. Each girl was in the program during different rotations, alongside a different group of peers, so the exact activities varied. The 8-week program consistently involved an hour-long session each week and involved sport-specific drills and games. Some sports included were wheelchair basketball, sitting volleyball, and boccia. Grounded in social constructivism, this study utilized semi-structured interviews and inductive thematic analysis to explore the meaning of participants' experiences. Interview questions focused on participants' experiences, feelings they had about the aspects of the program they discussed, and how participating had impacted them. The interviews lasted 35 – 65 minutes. Parents were welcome to attend and contribute to the interview; two participants were accompanied by their mom.

Findings

Participants' descriptions of the program resulted in four sub-themes about the influences of experience quality, and four sub-themes related to opportunities for development. The para-specific model promoted belongingness but led to a skill disparity between participants that compromised experiences of challenge for some. Coaches helped create a positive social environment, but when coaches were not knowledgeable about the sports being played, participants felt frustrated. The congregated program alleviated barriers to participation and gave participants access to new, positive sport experiences. This program provided an introduction, but participants lacked developmental progression in parasport afterwards, either ceasing participation or remaining in the available introductory programming after developing beyond its scope. When quality experiences were supported by each of these areas, participants were able to achieve physical and social development, improved self-perceptions, and develop the desire for continued sport participation.

Conclusions

Participation in the parasport program was an enjoyable experience with opportunities to socialize and develop sport skills. Development and enjoyment were influenced, both positively and negatively, through perceptions of the physical and social environment, and program activities.

Keywords: youth; recreation; physical disability; qualitative

# SCHOOL-BASED MOTOR SKILLS AND PHYSICAL ACTIVITY PROGRAM FOR PRESCHOOLERS WITH DEVELOPMENTAL DELAY

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Abstract ID: 227

Aim

This pilot study aimed to develop a motor skills-based physical activity program and examine its effectiveness for preschoolers with developmental delay.

Methods

We designed a school-based physical activity program (PAP) for preschoolers with developmental delay. The PAP was adapted from the activity guide developed by the Special Olympics Young Athletes Program. Participating teachers of this study had to: (1) attend a 2-hour teacher training workshop, (2) observe four live lessons taught by a fitness instructor, and (3) conduct three physical activity lessons after observing each live lesson. Three childcare centers of three classes with a total of 33 preschoolers aged 4-6 years old with developmental delay participated in the PAP. The intervention involved two 30-minute physical activity lessons in each week for 8-week duration. Consent for participation was obtained from principals and teachers of the childcare centers and parents of the study sample. Outcome measures included baseline and post-intervention tests of motor skills based on the Movement Assessment Battery for Children-Second Edition (Movement ABC-2) and accelerometer data during 5 consecutive days of time spent in school (i.e., around 7.5 hours per day). Paired t-tests were computed for baseline and post-intervention values with significance level set at 0.05.

Results

Test scores of “aiming and catching” and “balance” components of the Movement ABC-2 were converted to standard scores. Descriptive results showed that 72% of children performed poorly (scored below the 15th percentile) in “aiming and catching” as 40% of them scored poorly in "balance", which denoted poor performers are “at risk” of having movement difficulties. Results showed that there were no significant mean differences between pre- and post-intervention scores in “aiming and catching” ($t = -0.70$, $p > 0.05$) and “balance” ($t = -1.71$, $p > 0.05$). In terms of the amount of physical activity accrued during the time children attending preschool, the mean daily percentage of moderate-to-vigorous physical activity (MVPA) level of the preschoolers was significantly higher (7.18% vs 5.62%, $t = -4.07$, $p < 0.001$; Cohen’s $d = 0.89$) during post-intervention than baseline value for the whole sample.

Conclusions

The study was successful to achieve both objectives of developing a PAP for preschoolers with developmental delay and to trial test its feasibility. We also provided teaching training workshop and teaching resource manuals. However, the findings could only show that PAP is successful to improve children's physical activity levels during school time but it is not successful to enhance children's motor skills of "aiming and throwing" and "balance". Possible reasons for the failure in improving children's motor skills might be due to the short period of intervention, either due to the frequency of 2 times per week being not adequate and/or 8-week duration being not long enough. Future study could examine the effect of the PAP on motor skills performance for a longer intervention duration.

Keywords: Physical Activity, Preschools, Developmental Delay

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# VIDEO MODELING TO SUPPORT PHYSICAL ACTIVITY IN CHILDREN WITH AUTISM SPECTRUM DISORDER: A SYSTEMATIC REVIEW

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Abstract ID: 216

Aim

To examine the literature on video modeling to support physical activity in children with autism spectrum disorder (ASD). Specific aims were to (1) identify the targeted skills and behaviors of interest, (2) identify the type of video modeling procedure implemented, and (3) examine the effects of video modeling.

Methods

This review was guided by The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Search procedures, eligibility criteria, and data extraction were defined a priori to the study protocol. Nine databases were searched for studies published between 2010 and 2019. All database searches included the following identifiers: For ASD (autism OR “autism spectrum disorder” OR asd); AND physical activity (“physical activity” OR “physical education” OR “motor skills” OR exercise OR fitness OR athletics OR sport OR aquatics OR dance); AND video modeling (video OR “video modeling” OR “video self-modeling” OR “point of view” OR “video prompting”). Titles and abstracts of studies retrieved from the search were further reviewed to determine eligibility criteria. The eligibility criteria included the following: (a) included participants with autism spectrum disorder, (b) indicated the use of video modeling, video self-modeling, point-of-view video modeling, video prompting, or a related video modeling procedure, (c) included data related to support physical activity, physical education, motor skills, exercise, fitness, athletics, sport, aquatics, dance, or related motor activities, (d) included children and adolescents between ages 3-21 years, (e) published between 2010 to 2019, (f) retrieved from a peer-reviewed scholarly journal, and (g) available in English.

Results

The initial search retrieved 94 studies. After further examination, nine studies met the eligibility criteria and were included in the review. The studies totaled 104 participants (age 3-17 years). Results indicated the most widely used modeling procedure was basic video modeling, followed by video prompting and video self-modeling. Targeted skills and behaviors included aquatics, dance, motor skills, video gaming, physiological responses to physical activity, and verbal complimenting during an athletic game.

Conclusions

This systematic review found video modeling to be a promising intervention to support physical activity in this population. However, it is suggested for future research to provide even more consistency, clarity, and rigor in the design, implementation, and monitoring of the intervention. This would allow researchers to replicate and systematically evaluate the effectiveness of video modeling to support physical activity in children with ASD. While there are no specific recommendations relative to the type of modeling or targeted skill, Judge and Morgan (2020) presented several strategies in which video modeling could be used to support physical activity in children with ASD.

Reference

Judge, J. P., & Morgan, K. N. (2020). Video modeling: Strategies to support physical activity in children with autism spectrum disorder. Palaestra, 34(2).

Keywords: autism spectrum disorder, physical activity, systematic review, video modeling.

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# INTERFACE BETWEEN PHYSICAL EDUCATION AND THE INDIVIDUALIZED EDUCATION PLAN: A SYSTEMATIC REVIEW OF THE LITERATURE

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Abstract ID: 232

Aim

Physical Education (PE) is an area of knowledge that aims to provide guided experiences that promote the development of physical fitness, the improvement of motor skills in sports and leisure activities, involving the whole body in motion. The Individualized Education Plan (IEP) consists of a document that can direct pedagogical practices in the context of Physical Education, as it provides subsidies capable of guiding the actions of teachers, from the survey of the characteristics of students. The present study, with a qualitative approach, of the systematic literature review type, aimed to analyze the production of knowledge involving the interface between Physical Education and Individualized Education Plan

Methods

After consulting the Medical Subject Headings (MeSH), the descriptors were chosen, which, associated with the Boolean operators AND and OR, resulted in the following search expression: "physical education" AND ("individualized education plan" OR "IEP"). The survey was conducted in the following databases: OneFile (GALE), Scopus (Elsevier), ERIC (U.S. Department of Education), Web of Sciemce, Sage Journals. In addition, a manual search for articles that could contribute to research in journals in the area of Physical Education was also carried out. As inclusion criteria it was established that the articles should present the descriptors physical education, individualized education plan, and / or IEP in the titles and/or abstracts; be published in scientific journals in Portuguese, English or Spanish.

Results

Of 802 articles found, 39 were considered eligible for this study, plus 9 articles identified by manual search, totaling 48 articles. After reading in full and being treated by thematic analysis, they were organized into three categories: Participation of PE teachers in IEP meetings; Care and guidance on information related to the IEP; IEP as a pedagogical resource. Discussion/Conclusions The analyzed articles report that PE teachers still do not participate frequently in IEP meetings, which in most cases are centralized in only a few members of the school team. This can happen due to meeting times, difficulty in accessing parents and the management team and lack of training for Physical Education teachers to work with the IEP. The use of tablets, spreadsheets and checklists can be an alternative for the PE teacher who use the IEP, however, the importance of the participation of specialists in the elaboration of these instruments is emphasized, so that possible errors are minimized.

The IEP while in school environments as well as in leisure situations, such as summer camps, bringing benefits to the participants, in addition to being an instrument already validated in the English, Portuguese and Spanish versions which allows a globalization of knowledge and the discussion of practices at the international level.

Keywords: Physical Education; Individualized Education Plan

# USE OF MODERATE TO VIGOROUS PHYSICAL ACTIVITY DESIGN PROGRAM FOR A GIRL WITH AUTISM SPECTRUM DISORDER: A CASE STUDY

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Abstract ID: 125

Aim

The purpose of this study was to determine the effect of a 4-week physical activity intervention on self-regulation and overall health of a 12-year-old Filipina female diagnosed with severe autism disorder.

Methods

A girl was introduced to movement learning channel (MLC), a moderate to vigorous physical activity program, for improving self-regulation and overall health. MLC is a combination of locomotor skills such as running, galloping, single-leg hop, horizontal jump, skipping and basic gym exercises like squatting, pushing, pulling and throwing. This study investigated as to what extent MLC as a physical activity can have effect on to the behavioural change of the girl's exposure to neurotypical individuals. The girl completed the 4-week, 3 times per week intervention. The instruments used were: The Test of Gross Motor Development-3 (TGMD-3), McArdle 3-minute step test and Omron bioelectrical impedance analysis to measure the body fat composition. Mother and the therapist were interviewed. Facilitating and rating the TGMD-3 by the author was by direct observation.

Results

The girl displayed improvement in her locomotor movement pattern after 4 weeks of MLC program. The girl showed increased muscular strength (from bodyweight squats to squatting with 15 kg medicine ball, throwing catch with a slam ball from 6 kg to 16kg) and cardiovascular endurance (3-minute McArdle step test pretest at 133 bpm to post-test at 117 bpm). There was also an improvement on weight loss (130 pounds down to 121 pounds on the post-test) and body fat percentage (from 37.4% to 36.0%). After intervention, the girl showed an improvement on the (video recorded) locomotor movement pattern, except in the skipping. In addition, a transformed change in her behaviour was affirmed by her mother and her occupational therapist. She demonstrated very positive new traits in communication and through social interactions.

Conclusions

Exposure to neurotypical individuals in the gym and to MLC settings may have changed her behavioural functioning. Based on this experience, it is recommended to have further interventions in the use of MLC to children with ASD.

# ALIISA – ALL IN–INTERNATIONAL INCLUSIVE SOCIETY IN ARTS - CONTINUING INCLUSIVE ART EDUCATION IN DANCE/MUSIC/ART PEDAGOGY FOR GENERAL EDUCATION

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Abstract ID: 205

Introduction

ALIISA – an Erasmus+ funded project (Sept 2020 – August 2023) is an innovative and developmental project for inclusive art pedagogy. The project is coordinated by Savonia University of Applied Sciences, Finland, in partnership with universities from Lithuania (Vilnius University Šiauliai Academy) and Austria (Universität für Musik und darstellende Kunst Wien), as well as the Austrian cultural association ”Ich bin OK” and the Finnish music and dance school (Kuopio Conservatory). During the project, training and research in inclusive art pedagogy will be carried out in international cooperation as well as nationally in cooperation with working life partners. The trainings are targeted at art pedagogy professionals working in the field of general (dance/music) education and students of the educational institutions involved in the project.

Objectives

The objectives of this international cooperation are the following:

- To improve social significance of art and its role in promoting social inclusion and well-being
- To develop pedagogical attitudes and skills
- To enhance the quality of art pedagogical teaching and ensure the availability of qualified professionals on the field of general and dance/music/art education

Methods

Continuing education in art pedagogy for general education will be piloted in all partner countries in the academic year 2021–2022. The project organizers are the universities of the project and all participants (trainers and associated partners) are involved in the planning and implementation of the new curriculum.
Expected

Results

The intended link between education and professional life (associated partners) will foster authentic learning environments during continuing education training periods and will enhance skills and competences of pupils, students and teachers involved in the project activities.

New operational and creative educational methods, techniques and tools for the educational institutions at their work with students will support inclusive environments.

Keywords: Inclusion, dance, music, art, creative continuing education

# A SYSTEMATIC REVIEW AND META-ANALYSIS OF THE EFFECT OF AEROBIC EXERCISE INTERVENTIONS ON CARDIORESPIRATORY FITNESS IN ADULTS WITH INTELLECTUAL DISABILITY

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Abstract ID: 153

Aim

research continues to provide evidence that adults with intellectual disabilities (id) have low cardiorespiratory fitness (crf) levels. Low crf has been associated with a high risk of cardiovascular disease and all-cause mortality. Participation in regular exercise can help increase crf. While several reviews have broadly synthesized exercise interventions that promote health-related fitness in adults with id, none have specifically evaluated the effects of aerobic exercise (ae) interventions on crf. The main aim of this study was to perform a systematic review and meta-analysis of peer-reviewed clinical trials that evaluated the effects of ae interventions on crf in adults with id, aged 18-65 years.

Methods

the review followed prisma guidelines and was registered in prospero (crd42020209775). Eleven electronic databases were searched, resulting in 1,975 records (earliest available to oct 2020). The search strategy included terms in four categories: sample, intervention, testing/assessment protocols, and exclusionary terms. Sixteen trials were reviewed and meta-analyzed using cochrane's revman software. The testex scale was used to assess the risk of bias.

Results

The 16 trials collectively analyzed data from 549 adults with ID, 291 in experimental groups and 258 in control groups. Results of meta-analysis revealed a statistically significant effect of the AE interventions on CRF in adults with ID was revealed (SMD = 0.41; 95% CI = 0.19 to 0.63; z = 3.59; p < .000), with low heterogeneity (I2 = 35%, p = .08). Interventions that combined AE with other forms of exercise produced slightly more significant gains in CRF (SMD = 0.39, 95% CI = 0.17 to 0.61; z = 3.50; p < .000) than non-combined (SMD = 0.42, 95% CI = 0.06 to 0.79; z = 2.26; p = .02). Heterogeneity was low and non-significant for both combined (I2 = 41%, p = .12) and non-combined (I2 = 39%, p = .11) interventions. When the effect of AE interventions was analyzed by outcome measures, similar significant effects were observed for the VO2peak in seven studies (SMD = 0.54, 95% CI = 0.14 to 0.83; z = 2.79, p = .005) and the 6 minute walking test (6MWT) in eight studies (SMD = 0.48, 95% CI = 0.05 to 0.79; z = 2.25, p = .02). Heterogeneity was low for both measures (VO2peak, I2 = 35%, p = .16; 6MWT, I2 = 46%, p = .07). The mean total TESTEX score (out of 15) was 8.2 ± 3.5 (range 2-14) with seven trials scoring below 50%.

Conclusions

AE interventions can effectively promote CRF in adults with ID, whether combined with other forms of exercise or non-combined. Whenever feasible, researchers should utilize direct measures of aerobic capacity with adapted testing protocols to improve the quality and credibility of AE intervention studies. Further research is needed to assess AE interventions' long-term effects on CRF and physical activity levels in adults with ID.

Keywords: Aerobic capacity; aerobic intervention; cardiorespiratory fitness; familiarization; intellectual disability

# QUANTIFICATION OF INTERNAL AND EXTERNAL TRAINING LOADS IN AN ELITE PARALYMPIC FEMALE SHOT PUT ATHLETE

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Abstract ID: 24

Aim

The purpose of the study was to describe the internal and external training loads of an elite female Paralympic shot put athlete and to investigate the relationship between internal and external training loads during a 4-week training period before the World Championships.

Methods

A female Paralympic shot put athlete (age: 42.2 years; body mass: 74.0 kg; height: 167.0 cm; sport class: F54) participated in the study after being informed about the monitoring procedures. The athlete followed a 4-week training program aiming to achieve peak performance during the 2019 World Paralympic Championships. Before and after the 4-week training period, shot-put performance was measured. In addition, the monitoring process included internal and external load measures of both, physical (i.e., gym sessions) and technical (i.e., throwing sessions) loads. The internal load was monitored by the rate of perceive exertion (RPE), thirty minutes after the end of each training session, reported on a 10-point scale, in physical (p-RPE) and technical (t-RPE) training sessions. The external load was calculated by the sum of both, physical and technical training volumes. Physical external load (pEL) was calculated as: number of sets × number of repetitions × weight lifted (kg) in the bench press, overhead press and row machine resistance-training exercises. Technical external load (tEL) was calculated as: number of throws × weight of the shot (kg). Means and standard deviations were used to describe variables and Pearson-r correlation coefficient was used to investigate the relationship between variables.

Results

Shot put throwing performance increased from 7.61 m to 8.19 m following the 4-week training period. Measurements of internal load showed that p-RPE was 7.55±1.21 AU and t-RPE was 7.40±0.62 AU during the 4-week training period. In addition, measurements of external load showed that pEL was 7,938±2,191 kg and tEL was 563±202 kg. A significant high correlation was found between p-RPE with pEL (r=0.9984, p=0.002) and with tEL (r=0.9703, p=0.030).

Conclusions

The assessment of the relationship between internal and external training loads may contribute to improve the athlete's preparation process, leading toward better competition results. Indeed, the athlete in this study improved her shot put performance 7.6% (and won the World Championship in her category). Relatedly, our results indicated a high correlation between p-RPE with both pEL and tEL. In comparison with the pEL and tEL, the measurement of p-RPE may be easier and less time-consuming, helping in the monitoring process of the athlete.

Keywords: para-athletes, female, athletes, resistance training, human physical conditioning, athletic performance

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# CO-TEACHING: POSSIBILITIES TO SUPPORT THE INCLUSION OF STUDENTS WITH DISABILITIES IN PHYSICAL EDUCATION CLASSES

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Abstract ID: 137

Aim

Following global trends oriented towards inclusive education, physical education (PE) in Brazil has sought to ensure opportunities for effective participation of students with disabilities (SWD) in general schools. However, physical education teachers (PETs) still face many challenges, such as the lack of direct or indirect support services for inclusion in this curricular component. Thus, the present study aimed to analyze the possibilities and limitations of co-teaching as a support service to promote the inclusion of SWD in the context of PE, in a collaborative perspective.

Methods

This is a study that uses a qualitative approach, characterized as collaborative research. Data collection was carried out in two public schools in a small city located in the state of São Paulo in Brazil. The participants were three PETs and their respective group of students, with and without disabilities. The participants of the study were assisted by the researcher and specialist in Adapted Physical Education, who worked as a collaborative teacher. As data collection instruments, semi-structured interviews and systematic observation were used before, during and after the collaborative action process. The collaborative action was developed according to the following steps: communication; co-planning and preparation; co-teaching and co-evaluation; and conflict resolution. The processed data was based on thematic analysis.

Results

As a result, the following co-teaching models were identified: (a) One teaches and one observes: the PET teaches all students and the co-teacher observes and takes notes; (b) Teaching stations: work stations are created, and the groups of students rotate receiving alternate instructions from both teachers (PET and co-teacher); (c) Team: both teachers (PET and co-teacher) teach the whole group together; (d) Parallel teaching: students are divided into two groups, and each teacher guides a group, through the same contents and activities; (e) One teaches and one assists: one of the teachers provides instruction to the whole group, and the other teacher assists him/her; (f) Alternative teaching: one teacher provides instruction to most students in a large group, and the other teacher provides instruction to a small group, in which this instruction can be reinforcement teaching, a pre-teaching or an enrichment activity.

Conclusions

As a positive aspect, participants highlighted that both students, with and without disabilities benefited from co-teaching. The main limitation pointed out by the study participants was the lack of time for planning together. Thus, co-teaching, as a collaborative service, provided different support models favoring the inclusion of all students, confirming the effectiveness of this cooperative intervention in the context of general Physical Education.

Keywords: Coteaching; Physical Education; inclusion

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# IT'S (NOT) THE WINNING – THE SPECIAL OLYMPICS NATIONAL HANDBALL TEAMS IN THE TRADE-OFF BETWEEN DESIRE FOR SPORTING SUCCESS AND SOCIAL SUPPORT

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Abstract ID: 36

Aim

In 2019, two national handball teams from Special Olympics Germany took part in the Special Olympics World Games: a Unified Team (women and men with and without intellectual disabilities) and a women's Traditional Team (women with intellectual disabilities). The players for these teams were selected from several applicants and prepared for the event in try-outs and training camps. This selection procedure is a deviation from the usual procedure of Special Olympics Germany. Normally, the team that wins at the National Games competes as national team at the World Games. Building an elite team of players from different teams is not provided for in the statutes. The coaches of the handball teams, however, wanted to adopt a new approach. Therefore, the present study examines the selection criteria, the coaches' decision making process, and the ways in which the players interpret and experience this process of try-out. The research interest also extends to the training of elite teams preparing for tournaments like the World Games, which has not been researched as yet, either. Therefore, the views of coaches and players on the further process of preparation for the World Games were also examined.

Methods

To assess the sportive and non-sport-related routines between the actors, the researchers attended the try-outs and training camps. They carried out participant observations during training, test matches, meetings and other events, took field notes and conducted 22 guideline interviews with trainers and players. The data were analyzed using the Grounded Theory methodology (Strauss & Corbin, 1996).

Results

During the steps of the analysis, several categories from the generated data material were identified. To provide a coherent structure, they will be presented in two clusters. The first focus is on the nomination and screening process (Category "Lack of structure in the nomination and selection process"; with the sub-categories "Restricting formalities for (pre-) nomination" and "Ambivalent, individually supposed selection criteria"). The second is the further training process on the way to the World Games (Category "Purposeful, pro-social togetherness"; with the sub-categories "Training sessions dominated by offense tactics", "Positive cooperation within the teams" and "Asymmetrical structures between athletes and partners in the Unified team").

Conclusions

The results reveal that the game is determined by the participants without disabilities. They find themselves caught between the conflicting priorities of desire for sporting success and social support. This is presented as a matter of course. This shows that a hierarchical process is running on a meta-level. This still requires a lot of reflection. Such a reflection-process is indeed necessary to avoid that the differential category 'disability' consolidates hierarchical relationships between people with and without disabilities in the context of competitive sports.

Keywords: Grounded Theory, Special Olympics, competitive sports, national teams, Unified sports

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# THE EXPERIENTIAL PATHWAY FROM ACQUISITION OF DISABILITY TO FIRST CONTACT OF SPORTS

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Abstract ID: 25

Aim

To clarify what experiences contributed to “first contact” of sports, specifically looking at what psychological states were involved with what experience in the process of getting to “first contact” of sports after acquiring a disability.

Methods

The research design used “life-line graph” as a base to create an original graph. The graph was used as a recall tool for the subject to remember experiences during the timeline of getting to “first contact” of sport. A semi-structured interview followed the life-line graph to go into further detail of understanding the psychological experiences of the participant as well as understanding what experiences facilitated in “first contact” of sports. Thematic analysis was used for this study. The subject was a 26-year-old female participant from England (case study). The participant had acquired her disability at the age of 16 due to an accident. The accident resulted in paraplegia. Subject currently participates in wheelchair basketball at an elite level. The level of play was not specified.

Results

Using thematic analysis’ six phase processes, the two superordinate themes were identified as (1) Internal and (2) External Factors. Each theme further broke down into 4 sub themes: Personal Qualities, Psychological State for Internal Factors and Knowledge and Support System for External Factors. DISCUSSION: The purpose of the present study, was to clarify experiences that contributed to “First contact” of sports. Psychological state was a major theme that contributed to the experience of “First Contact.” The stages in the ‘Stage of Grief model’ were followed by the subject which may have impeded or accelerated the process of “First Contact” to sports. We just know that the subject did experience the stages. Next theme was “Knowledge Transfer.” The knowledge that was provided to the subject and the way she responded was a good indication of what psychological state she was in. Knowledge could have accelerated the process to “First Contact,” but it could have also impeded the subject from getting to “First Contact” quicker. The information may have also been transferred at perfect timing because the subject has successful proceeded to “First Contact.” Next is “Support Systems;” the medical and care staff members, the Physical Therapists, Occupational Therapists, Doctors, Hospitals, Social Workers and etc. are the personnel’s that informed the subject about the sports knowledge and disability sports knowledge. The ability to go to outpatient rehabilitation was huge for the individual. Lastly, “Personal Qualities.”

The subject happened to be good at sports and liked sports previous to the accident that caused the disability. The individual was also a competitive and motivated individual that could have contributed to the process of getting to “First Contact.” Overall, these are the experiences that the subject went through to proceed to “First Contact.”

Keywords: Acquired Disability, Sports, First Contact, Acceptance, Knowledge Transfer

# NELMS METHOD – USING WATER AS A THERAPEUTIC TOOL

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Abstract ID: 219

Nelms Method is both at project and a method that is running in Sweden over three years between 2019-2021. It is founded by “Arvsfonden”, an inheritance fund. The goal of the project is to develop the method and then educate the target group and their caregivers in the method. So far there has been educated almost 200 people in the method.

The Nelms Method is an aquatic program which uses the phenomena in the water therapeutically. It is for any disability, but was developed especially for Autism, Cerebral Palsy, and brain trauma. The foundation of the method is not medical, it is from two successful and unusual aquatic programs. One is “Gillavatten”, a program which disables fear of the water. A second is work done with elite swimming athletes to improve international and Olympic performances. Both programs use exercises in the water to cause change in sensory and movement perception, which leads to positive physical and emotional changes.

The program is simple, with a small number of exercises that are designed for the disabled person to self-apply, for caregivers and family members to assist, and as a resource for therapists. The Nelms Method uses three aquatic phenomena to stimulate changes. Aquatic physics are the way the heavier and lighter parts of the body interact with the water. Aquatic Rhythms are the way that the water flows over the skin, pushes into the body, or tugs on the body as the water or the body move. Aquatic breathing is the way that breathing mechanics and emotions are changed in the water. These three phenomena use Special exercises for both robust and gentle experiences of sensory stimulation, and for changing strength, control, and pliability.

The program includes training for caregiver handling of a range of disabilities. The method builds on the work and experience to Milton Nelms, an American living in Australia. He has an international reputation for his work with elite swimming athletes, their coaches, and different swimming and sport organizations. His methods in helping athletes to improve performance led him to develop an interest in the deepest instinctive responses that human beings have when going into the water. As a result, he has designed learn to swim programs and swimming improvement programs that use the same principles for anyone of any ability, age, or experience level with the water, including fearful children and elite athletes. For more information see www.nelmsmetod.se

Keywords: aquatic program, therapeutic training, disabilities

# ADAPTED PHYSICAL EDUCATORS USE OF SOCIAL MEDIA TO BRIDGE THE PROFESSIONAL LEARNING GAP

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Abstract ID: 18

Social media are virtual platforms that enable users to share and exchange information. Physical educators often use these platforms for professional development (PD). Indeed, physical educators have reported a multitude of benefits (e.g., networking, resource sharing) from accessing informal learning opportunities via social media. However, a lack of research has been conducted on adapted physical education (APE) teachers' usage of social media for PD. Thus, the purposes of this study were to explore how APE teachers use social media to learn about APE content, and compare how APE teachers' perceptions of informal learning on social media compare to their perception of nonformal learning (i.e., conferences) experiences.

A cross-sectional research design was used to characterize APE teachers' social media usage patterns. Descriptive statistics were reported, and multiple t-tests were used to compare participants' perceptions of the usefulness of face-to-face conferences for PD as well as the usefulness of social media for PD. In addition, multiple linear regression analyses were conducted on the predictor variables for participants' likelihood to use social media for PD or attending face-to-face conferences. Data were gathered from APE teachers from the United States of America (n=73).

The range of which participants' have used social media for PD was a few weeks to 18 years. The majority of participants (53%) used social media for informal learning a few times a week. YouTube and Facebook were the most popular social media platforms used, with Facebook (56%) and YouTube (53%) use at least once a week. Participants' perceptions towards the amount of information gained from social media when compared to conferences differed significantly ($p = .017$), with participants perceiving conferences as significantly more useful than social media for gaining information about four APE-related topics: (a) assessment, (b) collaborative strategies, (c) behavior management, and (d) working with students with specific disabilities ($p < .05$). Multivariate analyses revealed that personal and professional usage of social media for PD purposes were associated with conference attendance, as were several categories of reasons the participants selected for using social media for PD (e.g., collaboration).

This study demonstrated that APE teachers regularly use a myriad of social media platforms to enhance their informal learning experiences; however, they still prefer nonformal learning experiences, such as attending conferences, over social media. Social media can build a bridge between a lack of PD opportunities available to APE teachers or be blended within nonformal learning experiences. Future researchers should examine how PD creators can effectively use social media to promote APE teachers' PD and professional learning.

Keywords: Social Media, Professional Development, Adapted Physical Education, Conferences

# THE ASSOCIATIONS BETWEEN PHYSICAL ACTIVITY WITH QUALITY OF LIFE: THE MEDIATING EFFECTS OF PSYCHOSOCIAL HEALTH IN CHILDREN WITH INTELLECTUAL DISABILITIES

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Abstract ID: 20

Aim

Evidence shows that physical activity (PA) is associated with psychosocial health such as self-concept and social support and quality of life in children. Little is known about such relationships and the potential mediating effects of psychosocial health on PA and quality of life in children with intellectual disabilities (ID).

Methods

This was a cross-sectional study consisting of 69 children with ID (Mean age: 14.35±3.22; 19 boys, 50 girls) from four special schools in Hong Kong between March 2020 to November 2020. Factor analysis, correlation and regression analyses were applied to investigate the associations of self-report PA with quality of life (self-report and parent proxy-report), the mediating effects of self-concept and social support, and the moderating effects of age, gender, ID level and parental education level. Self-report PA was measured with Physical Activity Questionnaire for Children, quality of life with Pediatric Quality of Life Inventory, self-concept with Physical Self-Description Questionnaire, and social support with Multidimensional Scale of Perceived Social Support. The Chinese versions of these measures were valid and reliable and have been used in children with ID.

Results

Self-concept was found to be positively associated with PA and social support ($\beta$=0.533, $p<0.01$, 95% CI= [0.400, 0.912]). There was a significant association of self-report quality of life with parent proxy-reported quality of life ($\beta$=0.567, $p<0.01$, 95% CI= [0.319, 0.669]). Social support was found to be significantly associated with both parent proxy-report quality of life ($\beta$=0.391, $p<0.01$, 95% CI= [2.186, 11.198]) and self-report quality of life ($\beta$=0.340, $p<0.01$, 95% CI= [2.852, 10.536]), but no associations were found between PA with quality of life and social support. An indirect effect was found between PA and self-concept via social support ($\beta$=0.485, $p<0.01$, 95% CI= [0.342, 0.852]), and the mediating effects of social support were partial ($\beta$=0.225, $p<0.05$, 95% CI= [0.019, 0.469]). Significant moderating effects in the associations of PA and psychosocial health were found in age (self-concept: $\beta$=0.571, $p<0.01$, 95% CI= [0.029, 0.061]) and ID levels (self-concept: $\beta$=0.570, $p<0.01$, 95% CI= [0.248, 0.575]; social support: $\beta$=0.604, $p<0.01$, 95% CI= [0.297, 0.637]). Mother education levels also moderated the association between PA and parent proxy-report quality of life ($\beta$=0.359, $p<0.05$, 95% CI= [0.029, 1.977]).

Conclusions

PA was positively associated with self-concept, and the indirect effects of PA on self-concept was partially mediated by social support. There were positive associations between social support with self-concept and both self-report and parent proxy-report quality of life. No associations were found in PA and quality of life. Age, ID levels, and mother education levels were found to moderate the associations between PA and psychosocial health. Future research should target at improving self-concept through social support of children with ID through PA interventions.

Keywords: physical activity, quality of life, psychosocial health, children, intellectual disabilities

# MODERATE-TO-VIGOROUS PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR IN CHILDREN WITH AND WITHOUT DEVELOPMENTAL COORDINATION DISORDER: DO FUNDAMENTAL MOVEMENT SKILLS MATTER?

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Abstract ID: 87

Aim

For children to achieve health benefits, it is important to perform substantial amount of moderate-to-vigorous physical activity (MVPA) while reducing the amount of time spent in sedentary behavior (SB). All children are recommended to accumulate at least 60 minutes of MVPA daily. However, there is a pandemic of physical inactivity in children worldwide. Compared to children with typical development (TD), those with developmental coordination disorder (DCD) are less physically active. Mastery of movement skills such as fundamental movement skills (FMS) are potential correlates of physical activity. Therefore, the purpose of this study was to examine the associations of FMS with MVPA and SB in children with DCD when compared to their peers with TD.

Methods

This study utilized a cross-sectional design. The participants included 172 Chinese children with DCD (n=73, 49 boys, mean age: 8.4±1.3 years) or TD (n=99, 48 boys, mean age: 8.7±1.3 years) aged 6-10 years. The Test of Gross Motor Development-Second Edition was used to assess five components of FMS (running, jumping, throwing, catching, kicking) using both process- (movement patterns) and product-(movement outcomes) oriented approaches. The accelerometers (ActiGraph GT3X+) were used to monitor the time spent in MVPA and SB of all children for consecutive seven days. Generalized linear models were performed to compare group difference in all outcome variables and to examine the associations of FMS with MVPA and SB in both groups after controlling for key confounders. Hierarchical logistic regression models were used to examine significant predictors of the MVPA guideline attainment.

Results

Children with DCD had significantly poorer performance in FMS proficiency in terms of both patterns and outcomes. Children with DCD were also less likely to meet the MVPA guideline than children with TD (33% versus 46%). MVPA and SB were significantly associated with various components of FMS in both groups of children, with sex being a significant moderator. Movement patterns of catching (odds ratio=1.686, $p<.05$) was a significant predictor of children's attainment of the MVPA guideline.

Conclusions

The present study adds to the growing body of evidence that children with DCD present with deficits not only in motor competence but also in physical activity participation. Catching skill is a significant predictor of the MVPA guideline attainment. It is important to develop object control skills in early childhood, particularly for children with DCD, to combat physical inactivity and its related health problems. Additionally, stability skills were not assessed which is a limitation of the present study. Future research is warranted to examine the relationship between FMS and physical activity in children with and without DCD comprehensively by including the component of stability skills.

Keywords: MVPA, fundamental movement skills, motor impairments, children

# ASSOCIATION BETWEEN MOTOR AND LANGUAGE SKILLS IN CHILDREN WITH AUTISM SPECTRUM DISORDER: A SCOPING REVIEW

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Abstract ID: 220

Aim

An emerging body of literature has established that early motor skills may be a key predictor of language development in children with autism spectrum disorder (ASD); however, the characteristics of subject groups, targeted skill areas and its assessments tools, and methodological approaches significantly vary across previous studies. This scoping review aimed to map out the associative nature of motor and language skills among children with ASD according to different age groups and ancillary attributes by investigating empirical studies published in the past 20 years.

Methods

We searched research articles published in peer-reviewed journals between January 2000 and October 2020 using four search engines, including PsycINFO, PubMed, Linguistics and Language Behavior Abstracts (LLBA), and Google Scholar. Search terms included a mixture of the key and close variants (e.g., “motor”, “movement”, “language”, “literacy”, “autism”, and “ASD” etc.) as well as secondary terms (e.g., “association”, “prediction”, or “relation” etc.). The search was limited to articles published in English. A total of 18 studies underpinning the relationship between motor and language development in children with ASD were selected and analyzed through Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

Results

Available evidence suggested that studies on infants with or at risk of ASD particularly aimed to identify the stages of motor and language skills acquisition for preventive purposes while studies on school-age children focused on practical implications of motor and/or language delay in this population for intervention development. Despite lack of agreement among available instruments for motor and language skills assessments, the positive relationship between motor and language development were shown in which both gross and fine motor skills may predict the rate of expressive and spoken language development in children with ASD. Discussion/

Conclusions

This scoping review highlighted an array of research on motor and language skills in children with ASD as a building block for healthy development. Findings support early link between the two skills in that early motor difficulties may forecast the subsequent language delays in children with ASD. More studies on such relationship in later childhood and adolescence are warranted to draw practical assistance, which can assist children with ASD to achieve successful transitions to adulthood.

Keywords: autism; motor skills; language skills; developmental delay; scoping review

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# FACTORS INFLUENCING PHYSICAL ACTIVITY LEVEL DURING ACUTE, SUBACUTE AND CHRONIC PHASE OF STROKE RECOVERY – A NARRATIVE REVIEW OF LITERATURE

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Abstract ID: 234

Aim

This review aims to evaluate how various factors are influencing physical activity in patients with stroke at various stages of stroke recovery.

Methods

This review included study articles screened by specific search strategies from PubMed central, EBSCOhost, Web of Science, Scopus, Google scholar. The keywords used were factors, stroke, physical activity and their synonyms using Mesh terms. Inclusion criteria: full text articles published in peer reviewed or scientific journals in English language, articles must have studied association between factors and physical activity level among patients with stroke either as primary objective or secondary objective, included study type observational, cross-sectional and cohort studies. Exclusion criteria: interventional studies, studies incorporating multiple conditions. Based on the mentioned eligibility criteria total of 25 articles were included. The included articles were used further for data synthesis.

Results

In acute stage stroke severity on admission, age, self-efficacy, intention to be physically active and presence of family members are influencing physical activity. In sub-acute stage Fear of falling, impaired upper limb, intrinsic motivation Gait speed and balance are associated with physical activity. In chronic phase age, physical function, fatigue, fall self-efficacy, balance self-efficacy, depression, gender, HRQoL, area deprivation index and work status being employed or unemployed are found to be influencing Physical activity.

Conclusions

The review findings are suggestive that functional ability is related with higher physical activity during acute, sub-acute and chronic stage of stroke recovery. Other environmental and personal factors influence physical activity level differently during all three stages of stroke recovery. There are fewer studies exploring the influence of various factors on Physical activity in acute and sub-acute stage as compared to chronic stage of stroke recovery.

Keywords: Factors, Stroke, Physical activity and their synonyms using MeSH terms

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# JAPANESE JUNIOR SWIMMERS' IMPRESSIONS UPON WATCHING PARA-SWIMMING RACES: COMPARISON OF IMPRESSIONS ABOUT A SHARED SPORT

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Abstract ID: 77

Aim

The Tokyo 2020 Paralympics games increased the chances of watching para-sports in Japan. Watching sports is not only important for Paralympic education but also valuable for learning para-sports outside school. This study aimed to clarify the impressions of junior swimmers who watched para-swimming races under different conditions and compare them.

Methods

Healthy swimmers aged 12-18 years who watched para-swimming races under conditions A and B were asked to freely describe their impressions. Condition A included 77 participants of the 2017 swimming competition who were asked to watch the para-swimming races. Condition B included 319 participants of the 2018 swimming competition who watched exhibition races with information on the para-swimming competition. Pamphlets with information on para-swimming were distributed before the exhibition races. Announcements explained the para-swimmers' impairments, classes, and previous results. Text mining with KH Coder ver.3* was performed on the participant's comments.

Results

The analysis identified the top-20 characteristic words extracted from the participants' comments. For example, "impairments" was one of the words for condition A, and "cheering" and "fun" were words for condition B. Moreover, a co-occurrence network of these words was created to show the connection between the frequently used words for each condition. The group of words frequently appearing in condition A was "impairments-full-power-try-appearance-impression-swim-fast-see-I," and co-occurrence was shown for "cheering" and "fun" in condition B.

Conclusions

This study identified "impairments" as a characteristic word for condition A that was related to the central words. This is supported by Tokuda (1990) found it is difficult to imagine concrete communication just by looking at people with disabilities. This suggests a risk of negative behavior changes by just watching a para-sport. In condition B, "cheering" and "fun" were characteristic words, which showed co-occurrence with each other. This supports Shida and Ikeda (2018), who found that people who experience sports can easily recognize that people with disabilities can also enjoy the benefits of sports. This implies that it is easy for people who have experienced swimming competitions to sympathize with each other and enjoy the fun of cheering. Thus, watching para-swimming, which provides an opportunity to understand people with disabilities, can encourage support for and alleviate the negative impression of people with disabilities.

*KH Coder developed by Higuchi (2014) is a free software for quantitative content analysis or text mining.

Keywords: understanding people with disabilities, para-swimming, a shared sport, Watching para-sports

# MANAGEMENT OF SPORT FACILITIES FOR PEOPLE WITH DISABILITIES IN JAPAN DURING THE COVID-19 PANDEMIC : RESEARCH ON RULES OF USE OF FACILITIES AT REOPENING AFTER TEMPORARY CLOSURE

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Abstract ID: 108

Background

The IOC announced on March 24, 2020 their decision to postpone the Tokyo Olympics/Paralympics for about one year due to the global COVID-19 pandemic. The Japanese government also declared a nationwide state of emergency for the period from April 16 to May 25. Sport facilities including those for people with disabilities were forced to close in accordance with this government policy. At the reopening of these facilities after the state of emergency declaration had been lifted, the Japan Sports Agency issued guidelines for regional sport facilities to prevent COVID-19 infections on May 14. However, each facility needed to establish their own rules in accordance with the facility characteristics as well as prefectural policies to prevent infection after the reopening. In particular, the rules at reopening of sport facilities that prioritize sport for people with disabilities were important landmark in the COVID-19 pandemic.

Aim

After the state of emergency declaration was lifted, a new lifestyle with COVID-19 needed to be established. The aim of this study was to reveal the rules at reopening of sport facilities for people with disabilities under this new style.

Methods

The survey was conducted with 141 sport facilities for people with disabilities nationwide. Data were collected by looking over the facilities' websites and conducting telephone interviews. The survey contents were ① facility attributes, ② understanding of users' contact information, ③ measurement of body temperature, ④ records on health status check sheets, ⑤ general matters to be attended to (mask wearing, etc.), and ⑥ introduction of reservation systems (②–⑥ are included in the guidelines to prevent COVID-19 infections in sport facilities in regional areas). Cross tabulation and chi-square tests were performed for each facility attribute. The survey was conducted from June 15 to June 28, 2020. The subjects of the analysis were a total of 83 facilities in 36 prefectures.

Results and Discussion

Information that facilities obtained before reopening for the purpose of preventing infections was ① users' contact address 13.3%, ② measurement of body temperature, 32.5%, ③ completion of health status check sheet, 42.2%, ④ general matters to be attended to (wear masks, etc.), 51.8%, and ⑤ new introduction of a reservation system, 20.5%. ③ Check sheets were introduced more in facilities for persons with disabilities only (14 out of 23 facilities, 60.9%) than in inclusive-type facilities with non-disabilities (21 out of 59 facilities, 35.6%) ($\chi 2=4.322$, $p<0.05$). ④ General matters to be attended were implemented more in pay facilities (20 out of 30 facilities, 66.7%) than in free facilities (23 out of 53 facilities, 43.4%) ($\chi 2=4.155$, $p<0.05$). Smaller facilities tended to send out less information related to precautions. Soon after reopening, many facilities seemed to hesitate to recommend utilization of the facilities under the COVID-19 related confusion.

Keywords: sport facilities for people with disabilities, COVID-19 pandemic, Japan

# OUTDOOR LEARNING AND TEACHING FOR ALL: DOES IT BRING BETTER SCHOOL RESULTS?

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Abstract ID: 55

Research shows that time spent in natural environments and "green spaces" provides a myriad of cognitive, emotional and physical benefits, such as increased concentration, better academic performance, reduced levels of stress and aggression, or reduced risk of obesity in children and young people. On average, Czech children spend 3.5 to 5 hours a day on screen time and almost half of the children spend less than 1 hour a day outside. Promoting benefits of interacting with nature through teaching outdoors is desired.

PAPPUS (Plants and Play Producing Universal Skills) is an international project focused on adapting the British model of teaching outdoors to participating European countries. Next to the leading University of Gloucestershire from UK, the project partners are educational agencies from Poland, Slovakia, Austria, and Hungary together with Palacky University, Czech Republic. All partners are responsible for delivering one of the intellectual outputs (IO).

The project target group consists of primary and secondary school pupils and the project focuses on all educational areas defined by The Framework Educational Programme for Basic Education. An educational course developed within PAPPUS uses methods of playful pedagogy. It includes playful gardening and botany, which help acquire skills and competencies for future life and enthusiasm for nature and its protection. As most educational activities take place in the outdoor environment, the physical activity of children is increased naturally and without difficulty. Moreover, there is a presumption that living in "green spaces" has a positive effect on children's mental health.

The key outputs of the project are 1) training materials (methodological cards, a self-directed on-line platform) and 2) teacher training programme.

During the first phase of the project, national adaptation plans were created (IO 1 - leading partner Austria), and work began on the preparation of training texts (IO 2 - Play Learning Life, England). Developers of the IO 3 training course face special challenges due to the ongoing Covid-19 pandemic. In view of the restricted contact and movement, they considered three approaches to implement the teacher training programme - personal contact, education exclusively online or the combined form. Ultimately, they have chosen the blended learning approach.

The Czech pilot educational PAPPUS course affects the Olomouc region through involvement of teachers from a pilot school. The pilot school has a large number of integrated children with special needs and pedagogical assistants in each class. During the project and in a follow-up study we aim 1) to assess the impact of learning outdoors for these children and 2) to identify the barriers and benefits of being outdoors for them (qualitative study).

The final outputs of the project will be disseminated and communicated by experienced leaders of the Learning Outside movement (Učíme venku (ucimesevenku.cz) through their websites and offered courses. In this way, applicants from the entire country should be addressed.

Grant affiliation: Erasmus +, Project number: 2019-1-UK01-KA201-061967 https://cs .pappusproject.eu/

Keywords: outdoor education, playwork, ADHD, obesity, healthy lifestyle, physical literacy, PE, primary education

# UNDERSTANDING OF PHYSICAL ACTIVITIES OF PERSONS WITH SEVERE MOTOR AND INTELLECTUAL DISABILITIES IN ORDER TO IMPROVE WELFARE ASSISTANCE : A CASE STUDY OF A VIDEO RECORDING OF A BALL ACTIVITY

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Abstract ID: 138

Aim

Persons with severe motor and intellectual disabilities are invited to partake in a variety of leisure activities on a daily basis. It is expected that accumulating information on the kinds of activities provided and the physical activities of them will lead to research developments that will support the physical mobility of them. The purpose of this study is to clarify examples of physical activities of persons with severe motor and intellectual disabilities that are performed spontaneously and passively during activities provided as a part of welfare services. In addition, to clarify role of their supporters in there.

Methods

Target persons were three with severe motor and intellectual disabilities, each with different physical characteristics. In this activity, which was a bowling game, they rolled a rubber ball into a PET bottles that looked like a pin in order to knock it over. Their physical activity involved has been extracted from the video. At the same time, the involvement of their supporters was extracted from the video.

Results

Although the same activities were carried out, the physical activities of persons with severe motor and intellectual disabilities differed. There were also differences in the way the supporters interacted with them. One target person held the ball and did not let it go. Therefore, the supporters tried to help that release the ball. Another target person grabbed the ball with one hand and held it up. This was followed by a small wave of the hand to release the ball for throwing. The supporters provided sound and visual stimuli to draw their focus to the pins. The third target person seemed disinterested in the game and often looked in a different direction. So with the supporters' assistance, the target person held the ball and released it.

Conclusions

Even when the same activities were performed, the physical activities of persons with severe motor and intellectual disabilities were different depending on the characteristics of each them disability. It is necessary to consider how to support the physical activities of persons with severe motor and intellectual disabilities according to their disabilities.

# ANTHROPOMETRIC PROFILE AND STRENGTH IN YOUTH ATHLETES WITH PHYSICAL, INTELLECTUAL AND VISUAL IMPAIRMENTS

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Abstract ID: 226

Aim

Obesity is a public health problem that has increased in adults, in children and in adolescents, whatever their conditions. The prevalence of obesity in people with disabilities may be even higher due to the reduction in the level of physical activity (PA), it may be related to the reduction of strength essential to the functional capacity and autonomy of children and adolescents with physical (PI), intellectual (II) or visual (VI) impairment. The aim of the study was to analyse the anthropometric profile and strength in youth athletes with PI, II and VI.

Methods

The sample consisted of 611 youth athletes (boys n=410; girls n=201) with PI (n=317), II (n=111) and VI (n=183) with an average age of 15.6±1.6 years, participating in the 2018 and 2019 editions of the School Paralympics Games organized by Brazilian Paralympic Committee. Measurements of body mass, height, body mass index (BMI), and handgrip strength relative to body mass.

Results

There was no significant difference in the percentage of obesity among the disabilities, PI=9%, VI=14%, and II=11%. ANOVA indicated greater relative strength for adolescents with PI compared to VI and II ($p<0.001$). The PI presented a relative strength 16% greater than the adolescents with II and 14% greater than the group with VI, without significant difference between those last ($p=0.88$).

Discussion

Obesity in children and youth is a relevant factor for involvement by secondary diseases and, in the case of people with disabilities, it has a great impact on autonomy. In this study, mean percentage of prevalence of obesity was about 11%. This value found is higher than in the population without disabilities in the same age group, whose values approach 8%[1]. Due to limited access to PA, a higher percentage of obesity is expected in adolescents with disabilities when compared to those without disabilities[2].

The greater relative strength in PI may be related to functional compensations that the condition requires, using a wheelchair for example. Although the group is formed by youth athletes, the level of daily PA may not reach ideal levels, especially in VI and II group. It is necessary to have more data to verify this behaviour, including the aetiology of the disability and the level of PA. However, despite the limitation, it was possible to observe differences in the anthropometric profile and relative strength in the different impairments.

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# STUDY ON CHINESE PRE-SERVICE INCLUSIVE PHYSICAL EDUCATION TEACHERS TEACHING EXPERIENCE

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Abstract ID: 10

Aim

Inclusive physical education (IPE) reflects a philosophy that all children are educated in the same environment in which each child's individual needs are met. It is also a methodological orientation aiming at including all students into PE context. Many researches emphasized the importance of curriculum learning and educational practice to the professional growth of pre-service teachers from the perspective of theory and experience (Sato & Haegele, 2017). However, few people listen to the voice of pre-service teachers (Smith & Lev-ari, 2005), and pay attention to their understanding of experience and practice. Therefore, based on the practical needs of China's IPE, role theory as the theoretical framework, the purpose of this study was to understand the social role expectations of pre-service IPE teachers and factors that influence their ability to enact social roles.

Methods

Interpretative phenomenological analysis (IPA) was used as it provides a systematic way to gain deep understanding of the participants' understandings and experiences. The inclusion criteria for participants were (a) Undergraduate and graduate students; (b) All genders; (c) Undergraduates in higher grades and graduate students in all year; (d) Complete a disability related course; and (e) Direct experience with students with disability in PE context. Criteria (c) and (d) provide participants with basic knowledge related to disability, and criteria (e) brings life experiences to participants' storytelling (Larkin & Thompson, 2012; Reid, Flowers, & Larkin, 2005). Six male and one female student teachers, with an average age of 23 were recruited through WeChat, telephone and in-person invitation. Semi-structured interviews, field notes, and researcher reflective journals were used for data collection. All the interview recordings were transcribed and data analysis followed a six-step approach (Smith, Flowers, & Larkin, 2009). Role theory were used to facilitate the interpretation of the findings.

Results

Pre-service IPE teachers expect to learn systematic theoretical knowledge in teacher education programs and hope to have the opportunity to apply theoretical knowledge into practice. They constantly reflect on their disability assumptions and teacher's role in their teaching practice. They want to work in a safe and supportive environment, and expect and pursue mutual help and interdependence.

Conclusions

Teacher education providers need to consider the advantages and gaps in the current physical education teacher education programs, and listen to the voices and expectations of pre-service PE teachers; Pre-service IPE teachers need to be provided with the knowledge and skills they need in future teaching, as well as practice opportunities; Teacher education programs need to provide pre-service IPE teachers with the opportunity and time to reflect and the help and support they need.

Keywords: inclusive physical education; pre-service teacher; people with disability; teaching experience

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# INCLUSIVE PEDAGOGICAL PRACTICES IN PHYSICAL EDUCATION CLASSES: AN EXPERIENCE REPORT

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Abstract ID: 239

Aim

In accordance with the tenets of Special Education, Physical Education in schools has sought to ensure participation opportunities for students with disabilities and pervasive developmental disorders (PDD). Thus, the objective of this work was to describe and analyze inclusive pedagogical experiences carried out in general Physical Education classes.

Methods

This is a descriptive study, an experience report, derived from the teaching experience of two Physical Education teachers, in public schools in two cities in the state of São Paulo, Brazil. Those encompassed elementary school classes comprised of an average of 30 students (aged from 7 to 12) in each one.

Results

The results consist of the description of activities and experiences based on the pedagogical trajectories of these teachers, such as those designated for students with blindness: a) construction of materials for traditional children's games, such as the hopscotch game, with cardboard box lids, embossed edges, numbers and words written in Braille and in Portuguese, and a rattle to replace the beanbag, and b) elaboration of models of the sports courts, using embossed paper and textures to teach lines, spaces, sizes and distances of the playing fields. And those aimed at students with visual, physical, intellectual, hearing and PDD disabilities, such as: c) implementation of pairs or groups among classmates for collaborative, support and guiding actions; and d) diversified instructions, such as communication sheets, illustrative images, videos, verbal descriptions and visual, tactile and kinesthetic demonstrations. Those were listed as: 1) means of representation (presentation options and multiple means of representation) and 2) means of action and expression (using different types of equipment, materials and modifications in the environment), in which are included practices a), b) and d). And 3) means of engagement (techniques of motivation and encouragement in different forms of organization of students), which includes practice c).

Conclusions

Different approaches in the field of Physical Education describe strategies that lead to procedures and methodologies to inclusive practices. The analytical categories referred to the principles of Universal Design for Learning (UDL), in which the physical, social and learning environments are designed through different possibilities based on variations to suit and support a wide range of students. Thus, it was found that the activities were designed respecting their individuality in order to overcome the barriers imposed by society and that inclusive pedagogical practices are possible in general Physical Education, emphasizing an attractive environment and curriculum for all. However, there are still challenges to be overcome and, therefore, studies are needed to put this approach into effect.

Keywords: Inclusive Education; Physical Education; School; Universal Design for Learning

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# THE DEVELOPMENT MODE OF SPECIAL OLYMPICS UNIFIED SCHOOLS IN CHINA

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Abstract ID: 38

Aim

The Special Olympics Unified School program (SOUS), is Special Olympics International's education-oriented global initiative to promote acceptance and inclusion. China joined the program in 2014. Over the past six years, the promotion of the SOUS program has been a valuable experiment in the practice of inclusive education in China. The aim of this research was to determine the attitude and needs of teachers and teaching supervisors who have joined the SOUS program, the problems and difficulties encountered by teachers and schools in the process of implementing the program, and determine the influencing factors of promoting the program and reflecting on the effective path and support to promote inclusive education.

Methods

The research methods adopted for this study were survey and case analysis. First, eight teachers and principals from four special education schools in Beijing were interviewed to form an internal perspective of questionnaire content. Second, 12 professionals familiar with the SOUS program were recruited to test the validity of the items. Finally, a questionnaire about the development status of the program was formed. The survey sample consisted of 200 teachers and 100 school leaders who joined the SOUS program as participants of this study. The software, Questionnaire Star, was used to conduct an online survey. China's special education system is a partially segregated system. The main structure is that some students attend classes in traditional schools and some students attend special education schools. In terms of system and practice, the promotion of the SOUS program in China is dominated by special education schools.

Results

Due to the limitations of the education system, traditional schools are passive in participating, which also reflects the practical problems of China's inclusive education practice. According to the survey statistics, 60.37% of the students have participated in the special Olympic Games, but only the 23.71% of the schools have "Special Olympic tutors" to provide guidance for Special Olympic athletes. The main problems encountered in the process of promoting the SOUS project are: the integrated school project is not included in the centralized management of the superior, unable to form normal construction (25.61%), lack of Special Olympics integrated school project evaluation mechanism to lead the development (15.85%), insufficient allocation of physical education teachers, restricting the development of Special Olympics activities (15.24%).

Conclusions

The results of the study have made clear the promotion path, organizational form, and management mode of the SOUS program in China, as well as the number and characteristics of the participants, along with the form, content, teachers' and students' participation and social effects of the activities under the framework of SOUS. These results will help define the development characteristics, experience, and limitation of SOUS in China. Keywords: China, Special Olympics, Unified Sports, inclusive practices.

Keywords: China, Special Olympics, Unified Sports, inclusive practices

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# PARENT PERCEPTIONS OF BENEFITS OF ACTIVE PLAY INTERVENTIONS FOR PROSOCIAL BEHAVIOUR IN PLAY FOR 3-5 YEAR-OLD AUTISTIC MULTIPLES: A GRADUATE THESIS PROPOSAL

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Abstract ID: 75

Aim

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by life-long differences in social, communication and behavioural development, specifically in the way one communicates and interacts within their environment. Research demonstrates that ASD is more common among multiples (eg. twins or triplets) than in individual children. Despite challenges in social and communication skills, autistic persons have demonstrated the readiness to develop and maintain quality relationships. Regrettably, research highlights considerable social isolation of many autistic children during activities such as active play. Given the high prevalence of ASD among multiples, exploration of social, play behaviours between autistic siblings may provide helpful insight into prosocial behaviour development in autistic children. Furthermore, research with autistic multiples can provide unique insight into the social behaviours of autistic children during play when factors such as age, environment, and diagnosis are controlled for. The way that autistic multiples interact within this natural social environment during active play is a phenomenon necessitating further examination. To the researcher's knowledge, the proposed study is the only of its kind exploring this phenomenon; most research investigating the active play behaviours of autistic children is dedicated to comparison with neurotypical children. Structured physically active play interventions yield marked benefits across motor and social domains of development specifically impacting prosocial behaviour in autistic children. While this relationship between active play and prosocial behaviour is well documented in the literature, there is a significant gap in autistic multiples research; most studies are limited to questions of genetics. The purpose of this proposed study is to explore how parents of autistic multiples view the development of social play skills between their autistic multiples as a secondary benefit of active play programs.

Methods

Grounded in descriptive phenomenology, this study seeks to accurately describe the experiences and perceptions of parents of autistic multiples regarding their autistic children's active play behaviour. To this end, parents of autistic multiples who participated in a motor skills intervention that took place at Ontario Tech University between 2017-2020 will be invited to participate in an online semi-structured one-on-one interview. Participants will be asked a series of questions specifically focused on their perceptions of each of their autistic children's play behaviours. Each interview session will be audio-recorded, transcribed, and thematically analyzed using Nvivo software. Findings We hypothesize that this information will provide insight into the way which active play interventions may interact with social skill development of autistic multiples based on parent feedback.

Keywords: Autism Spectrum Disorders, Multiples, Multiple Birth, Twins, Triplets, Active Play, Social Skills, Children, Parents, Motor Skills, Physical Activity

# GROWING COACHES THROUGH ADAPTED PHYSICAL ACTIVITY

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Abstract ID: 213

Aim

The Growing Coaches – Adapted Physical Activity (APA) programme uses a cooperative learning framework to bring together high school students who show leadership potential and students who have additional support needs. The aim of the programme is to use APA to build both physical movement skills as well as the social nuances of team participation. Students who have additional support needs were looking for ways to participate in physical education alongside their neuro typical peers within a mainstream setting. Discussions were had with both the learning support centre as well as the year 12 head of physical education department. It was agreed that a 6-week pilot programme would be run to firstly gauge the interest and secondly see what the impact was for both the neuro typical and a typical students were.

Results

The results of the Growing Coaches Adapted Physical Activity programme showed an increase in overall engagement throughout the school. The flow on of the programme helped create the desired effect in building towards a 'whole of school approach to inclusion'. A survey to capture both the school leaders and the learning support students' voices showed positive reflections. STUDENT COACHES: "People such as X began saying hi and talking to us outside of the Tuesday afternoon". "it was nice just to play together in a normal setting" "I feel I got more out of this than the Learning Support students" LEARNING SUPPORT STUDENTS: "Can we do this again next term" "this is the best class ever" "I have new friends now"

This programme generated a huge amount of interest across the school as well as interest from other high schools within the Otago region. The pilot programme ignited what was to become a regular class within the school's timetable/curriculum. Using sport and recreation as a catalyst to help break down barriers so students of all levels of ability can participate alongside each other has enormous benefits. This programme has demonstrated how this can be done on a small scale. Putting in place the framework of a co-operative learning model and using adapted physical activity to bring students together will have a lasting impact on all those who have participated. The programme is being rolled out again in 2021 with two cohorts of student coaches participating.

Keywords: Growing Coaches, leaders, adapted physical activity, all abilities

# EFFECTS OF 14 WEEKS OF DAILY PHYSICAL ACTIVITY ON CARDIOVASCULAR FITNESS, BODY COMPOSTION, AND BONE MINERAL DENSITY FOR ADULTS WITH INTELLECTUAL DISABILITIES

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Abstract ID: 248

Aim

In Denmark persons with intellectual disabilities (ID) die 14.5 years earlier than the general population. One of the main causes for this reduced life expectancy is a lifestyle characterized by a high degree of inactivity. Physical activity (PA) can be a means to improve the health for adults with ID. This project investigated PA performed in a real-life setting, at the activity center ”Sports School for Adults with Intellectual Disabilities” (SSAID). The aim of this study was to investigate the effects of 14 weeks of daily PA at SSAID on cardiovascular fitness, body composition and bone health for adults with ID.

Methods

52 adults were recruited to the SSAID intervention group (IG) and 14 adults from other activity centers made up the control group (CON). CON performed recreational PA 1-2 times/week. The subjects underwent tests before and after the 14-week intervention period. Cardiovascular fitness was assessed via heart rate (HR) sampling in a two-step submaximal treadmill protocol where the subjects walked at two different speeds (3.2 km/h and 4.8 km/h) at a 5% incline for 4 minutes at each speed. Body composition and bone health were investigated with a DXA-protocol including whole body, lumbar and a dual proximal femur scan. The amount of PA performed at SSAID was assessed using 7-day accelerometry in random weeks. Linear mixed models were used to investigate changes between- and within-groups from pre to post tests. Between-group changes were tested as the difference between delta values (ΔIG-ΔCON).

Results

For cardiovascular fitness, a within-group difference was observed for IG; HR during the last 30s at both speeds in the treadmill test were reduced (3.2 km/h: -4.4 bpm, $p<0.05$; 4.8 km/h: -7.5 bpm, $p<0.001$) from pre to post tests. A within-group effect was found for fat mass (FM), the IG lost 1.02 kg FM ($p<0.05$) from pre to post tests. Between-group differences were observed in whole body bone mineral density (BMD) (0.024 g/cm2, $p<0.05$) and BMD of the left femur neck and (0.043 g/cm2, $p<0.05$) respectively. The subjects in IG took 1501 steps/h during school hours (412 minutes of PA/week on average), compared to 559 steps/h in their leisure.

Discussion

This study found positive health effects after 14 weeks of PA in body composition, bone health and cardiovascular fitness. The reduction in HR during submaximal exercise is the most clinically relevant finding. Despite the significant changes in HR and FM in the IG, no between-group differences were found in these variables, which is likely due to the relatively small number of subjects in CON. Future studies should ensure a better match between study groups. The between-group differences in BMD of whole body and left femur neck seems to stem form a decrease in CON BMD and a maintenance of IG BMD. The study of PA in real-life settings represents an opportunity to investigate already existing potential solutions to the societal problem of the poor health status of adults with ID.

Keywords: Physical activity, Health, Intellectual disability

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# THE RECENT DEVELOPMENTS IN ACCESSIBLE GOLF IN FINLAND

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Abstract ID: 229

Aim

Golf is a low-intensity sport, and it is suitable for almost everyone. However, some golf players may have different kind of health problems e.g., neuromusculoskeletal, which may prevent them to play. Therefore, it is important, that we support golfers with disability to start the golf and carry on playing golf by helping them by different ways. Furthermore, in Finland we need more accessible golf environments and new accessible golf playing tools. The main purpose of the project was to support accessibility and inclusion in golf and to improve possibilities to play golf. Second aim was to study the usefulness of paragolfer, which allows persons with disability to move across the golf fairway safely and play golf quite normally. The final objective of the project was to study the physiological responses before, during and after the round of golf.

Methods

The Ministry of Education and Culture financed the first public paragolfer in Finland. For the persons with disability, we arranged about 40 different events in different golf courses. In addition, special events were arranged for different patient organizations. We also had the spinal cord injury patient group, which were studied more carefully. Their heart rate (HR) and heart rate variation (HRV) were collected before, during and after the round of golf by Firstbeat Bodyguard (Jyväskylä, Finland), which allows continuous measurements for several days.

Results

Hundreds of persons with disability have tested paragolfer in the different golf courses in Finland and their feedback have been very positive. Therefore, some golf courses have already bought or are planning to buy their own paragolfer. The results show that playing with paragolfer is quite easy task for the persons with disability. Pretty many of them hope, that they can play golf more in the future. Furthermore, the feedback from the golf community emphasises, that project has promoted equity and inclusion in the golf. In in the spinal cord injury patient group the HRs during the golf round were on the moderate level. Furthermore, nocturnal HR and HRV before and after golf round in the study group showed, that playing is not too demanding.

Conclusions

In Finland, in most cases golf courses were suitable for golfers with disability and playing with paragolfer is quite easy, fast enough and paragolfer is not disturbing other players. The problem of the paragolfer is the high price. In some countries the problem is solved, that paragolfer can be hired e.g., from some foundation. This solution could be useful in Finland, too. The findings also indicate that the golf might be useful tool in the rehabilitation. Because the young adolescents with disabilities are often less physically active, playing with paragolfer may be one option to promote their activity. The goal in the future is to create and model a way, which helps persons with disability to participate in golf more easily in the part of their rehabilitation process.

Keywords: paragolfer, golf, inclusion, spinal cord injury

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# SURVEY ON CONSIDERATION AND INGENUITY DEPENDING ON THE DISABILITIES IN " PHYSICAL FITNESS " AT SPECIAL-NEEDS SCHOOLS

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Abstract ID: 151

Aim

Physical education activities of children with disabilities not only promote the development of motor movements, but also have important implications for maintaining and improving physical and mental health. At special-needs schools, physical education classes are the main focus, but there are other examples of activities such as "morning exercise" and "physical fitness ". He points out that it is important for teachers to have knowledge about teaching materials, teaching methods, and students as issues in physical education classes. (Suda.2015). From these, it is considered to be an important issue to clarify the specific consideration for guidance according to the disability. The purpose of this study was to examine the guidance considerations and issues for each disability regarding "morning exercise" in the special support school for intellectual disabilities.

Methods

In 2019, we conducted a questionnaire survey of teachers in charge of physical education at 819 special-needs school for people with intellectual disabilities in Japan. The content of the question was the content of the activity, the difficulty of each disability, and the specific considerations for each disability. Text data was analyzed by text mining the answer.

Results

Most of the content was aerobic exercise such as running and aerobics dance, and “Exercise for Physical Fitness”. Consideration according to disability： For children with intellectual disabilities, to promote understanding of activities and the passage of time, visual teaching materials such as photo cards and counters were used. To maintain motivation for activity, goals were set and activities were arranged. For autism spectrum disorders, timers and counters were used to give a time perspective. Routineized activities so he wouldn't be confused by change. For children with Down syndrome, in order to maintain motivation, he set goals and presented the results in an easy-to-understand manner with stickers. In addition, the exercise load was also adjusted.

Conclusions

In the “physical fitness “of the Japanese Intellectual Disability Special School, consideration and ingenuity are made according to the disability. They were related to (1) understanding, (2) Sustaining motivation, and (3) physical support. In physical education classes, group competitions are also held, but in the “physical fitness“, there are many individual exercises. It became clear that teachers are taking an approach tailored to their individual disabilities.

Keywords: Intellectual disabilities, Physical fitness, Consideration

# WHAT DO STUDENTS LEARN IN DISABLED SPORT TRIAL SESSIONS?

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[1]Juntendo University

Abstract ID: 164

Aim

As the Tokyo Olympics approach, trial sessions and come-and-try events for disability sports are being held throughout Japan to educate the public about the Paralympics. However, the current trial sessions appear to merely aim to have children without disabilities experience sports events adopted in the Paralympics. In Japan, it has been indicated that with respect to education about the Paralympics, trial sessions should desirably comprise the following four perspectives: understanding of competition, understanding of the Paralympics, understanding of disability, and understanding of an inclusive society. In this regard, this study reveals characteristics of para-sports trial sessions from questionnaire surveys of students who participated in trial sessions including a lecture on the Paralympics and inclusive society from the above points of view.

Methods

Questionnaires administered to high school students who participated in boccia trial sessions held in 2019 (face sheet: 5 items; knowledge of the Paralympics: 22 items with 3 options; perception regarding disabled sportsmen and women: 11 items with 5 options; free comments; N = 141) were analyzed with the statistical software SPSS ver. 22.

Results

The respondents were students aged 15 to 16 years, 52.4% of whom were male and 47.5% female. Significant differences were observed in responses before and after the parasports event regarding the following items: ‘Parasports are sports for those with disabilities’, ‘Parasports are appealing’, ‘I feel sorry for those with disabilities’, ‘Life is difficult’, and ‘It is fun to interact with those with disabilities’. For example, the number of people who responded with ‘I feel sorry for those with disabilities’ reduced after the event. In addition, for all items, the average value indicated that participants developed a more positive view after the event. It can be inferred that participants gained knowledge about disabilities by attending lectures on disabilities and experiencing parasports. Therefore, participants’ perception that those with disabilities are ‘weak people’ diminished. This study demonstrates that parasports events and lectures on disabilities can positively promote people’s understanding of disabilities.

Conclusions

Through their experiences in trial sessions, participants acquired knowledge about the events and the rules. Providing such experiences to students can be considered meaningful. Moreover, from the perspective of Paralympic education, it is desirable that students can learn about the components, rules of, and knowledge about the events through appropriate exposure to Paralympic events. To do so will require the development of programs and ongoing efforts to allow students to learn expansively based on practical experience

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# PHYSICAL EDUCATORS' EFFORTS TO INCLUDE CHILDREN WITH DISABILITIES IN GENERAL PHYSICAL EDUCATION CLASSES IN NIGERIA

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Abstract ID: 247

Aim

The provision of the same learning opportunities for learners with and without disabilities through integrating them in normal classroom settings is one of the goals of sustainable development. The primary purpose of this study is to determine physical educators' efforts to include children with disabilities in general physical education classes in Nigeria. These research questions were formulated to achieve the purpose: What are the efforts of physical educators to include children with disabilities i) at the start of general physical education class, ii) during the lessons in general physical education class, iii) during games and team sports in general physical education class, iv) using demonstration method of teaching in general physical education class, and v) using varied instruction in general physical education class?

Methods

The survey was employed for the study. Data were collected through a questionnaire administered to 71 physical educators, and presented using means and standard deviations.

Results

All the 71 physical educators made effort to include children with disabilities at the start of general physical education class, during the lessons in general physical education class and during games and team sports in general physical education class. Further results showed physical educators made effort to include children with disabilities using demonstration method of teaching and varied instruction in general physical education class.

Conclusions

The effort made by physical educators to include children with disabilities at the start of general physical education class involved nurturing positive social relationship, motivating, providing differentiated learning experience and developing warm-up activity sections for them. They also made effort to include children with disabilities within the duration of lesson in general physical education class through managing their behaviours. The effort made by physical educators to include children with disabilities during games and team sports in general physical education class involved not organizing same gymnastics but teaching handball, table tennis, games and sports for both children with and without disabilities They also made efforts to include children with disabilities using demonstration method of teaching and varied instructions such as visual and audio instruction to support them in general physical education class.

# EFFECTS OF APPLIED PHYSICAL ACTIVITIES USING A VIRTUAL REALITY DEVICE ON BALANCE, POSTURE, AND PASSIVE RANGE OF MOTION IN CHILDREN WITH CEREBRAL PALSY

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Abstract ID: 70

Aim

Children with cerebral palsy (CP) are less physically active than other children and that acts as a risk factor for their physical and mental health. It's difficult to find a motivating appropriate intervention program for these children and using virtual reality devices could be one of them. Although there are numerous theories of motivation, we focused on self-determination theory (Deci & Ryan, 1985). The aim of our study was to assess the effect of applied physical activity using a virtual reality device on posture, balance, and passive range of motion in children with CP.

Methods

Nine boys with moderate CP, specifically diplegia or hemiplegia, but walking independently, aged 12-14 years, participated in 10 adapted physical activity 30 minutes classes during 4 weeks, using the XBOX ONE device. Three mostly liked games "Just dance", „Sports rivals", „Fighter within" were chosen from the wider range of active games by the boys themselves. Before and after the study, the children were assessed using Barthel index, poster evaluation by W.W. Hoeger, Schmitz coordination samples, Fullerton equilibrium test. The research was carried out in Kaunas Special Education School. The analysis of the research data was performed with MS Excel 2016 program. Data are presented as arithmetic mean (SD). The significance level of statistical hypotheses $p < 0.05$ was used.

Results

The balance of children with cerebral palsy before VR therapy was 16.57 ± 9.05 points, and after VR therapy it significantly increased to 17.86 ± 10.25 points according to Fullerton equilibrium test. The changes of mean score coordination according to Schmitz before VR therapy was 44.71 ± 8.01 points, and after VR therapy it increased to 48.71 ± 6.55 points. There was a statistically significant difference ($p < 0.05$). The applied exercises did not have a significant effect on posture. The mean assessment score of the subjects' Barthel independence index before VR therapy was 72.14 ± 17.29 points, and slightly increased to 72.86 ± 16.29 points after treatment. The difference is not statistically significant. During VR therapy, the amplitude of the left hip flexion statistically significantly ($p < 0.05$) increased from 91.29 ± 18.60 to 93.00 ± 19.32 degrees and right hip flexion from 93,14±17,45 to 94.29 ± 17.77 degrees.

Although the generalization of our findings may be restricted by the small sample size, the results demonstrate that VR therapy is indicated to improve coordination, ROM and balance in children with CP.

Keywords: Children, Cerebral Palsy, Virtual Reality Device, APA

# DEVELOPING POSITIVE ATTITUDES IN PHYSICAL EDUCATION CLASSES – A METHODOLOGICAL TOOL PROPOSAL

Milena Pedro de Morais [1], Maria João Carvalheiro Campos, José Pedro Ferreira, Graciele Massoli Rodrigues
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Abstract ID: 245

Aim

Inclusive Physical Education classes can be a reality when Physical Education (PE) teachers have positive attitudes. Thus, it is imperative that educators embrace the continuing professional development along their careers. Therefore, the purposes of this study were to discuss the process of creating teaching strategies in inclusive physical education classes and, to create new teaching strategies in this context.

Methods

Participated on this pedagogical practice, 29 Brazilians Physical Educators that works in public schools at Peruíbe (São Paulo/Brazil). This action occurred on a meeting during 4 hours to develop inclusive teaching strategies using 'CRIE' (Campos, 2019) an tool that is possible to modify the context variations like space and environment, activities rules, strategies of instruction and equipment to facilitate the process of inclusion of students with disabilities. This meeting was organized in two moments, on the first moment each teacher described his/her own context and challenges to create inclusive teaching strategies and, on the second moment, the PE teachers created different strategies for different pedagogical situations.

Results

PE teachers experienced different possibilities to teach and created different strategies in own school context like peer tutor, sensory light equipment's and adapting visual information for specific instruction. During the second meeting moment, these teachers described that when they used 'CRIE' with new possibilities was possible to promote an inclusive physical education class. All these actions resulting good feeling about own teaching practice and, consequently to development positive attitudes on planning the inclusive pedagogical action.

Conclusions

We observed that this tool can facilitate the action of planning inclusive strategies and promoted new ways to work with students with disabilities. For the success on inclusive pedagogical action, it is essential that the process of continuing professional training is contextualized with the present needs of the students with disabilities, their colleagues and PE teachers, considering the school contexts.

Reference

Campos, M. J. "CRIE"… Because all children need to play! Revista da Federação Portuguesa de Desporto para Pessoa com Deficiência. Ano 5, v. 5, n. 1, p. 22-28, Lisboa, 2019

# EFFECT OF EXERCISE ON COORDINATION, BALANCE AND COGNITIVE FUNCTIONS IN PEOPLE WITH ALZHEIMER DISEASE

Diana Reklaitiene [1], Jurate Pozeriene [1], Dovile Rudnickaite [1]

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Abstract ID: 82

Aim

Alzheimer's disease (AL) is a chronic progressive neurodegenerative disorder starting and developing insidiously and its typical symptoms are cognitive dysfunction, psychiatric symptoms and behavioral disturbances, difficulties with performing activities of daily living. Physical activity interventions effectively support the functions of people with AL. Regular physical activity as prevention of gait, cognitive and coordination disorders for elderly with dementia is essential to maintain independence and safe movement. The aim of the study was to evaluate the effect of exercises on the improvement of balance, coordination, independence and cognitive functions in patients with Alzheimer's disease.

Methods

The study included 10 patients diagnosed with Alzheimer's disease and aged 65 to 90 years. All subjects underwent active exercise for the development of balance, coordination, and cognitive function. During 5 weeks, 15 sessions 3 times per week, for 40-50 minutes, with short breaks were performed. Barthel index was assessed before and after the study, coordination was assessed by the finger-to-nose, finger-to-finger, finger-to-finger, finger-to-finger test, balance was assessed using the Berg balance scale, gait speed was assessed by “Timed up and go test, cognitive functions were assessed by the Mini Mental State Examination (MMSE). Statistical analysis of the study results was performed using the Microsoft ® Excel 2010 software package.

Results

Applying a static and dynamic balance and coordination exercise program to patients with Alzheimer's disease for five weeks resulted in a statistically significant improvement in balance, coordination, a statistically significant reduction in walking time, and a statistically significant improvement in cognitive function.

Discussion

The five-week physiotherapy program in people with Alzheimer’s had no significant effect on the subjects ’independence. In conclusion, this study demonstrated that people with Alzheimer can benefit from 40-50 minutes of regular physical activity 3 times per week, to improve balance, coordination, cognitive function and walking speed. Further research should be carried out to determine what specific physical activity could affect people's level of independence.

Keywords: Alzheimer, physical activity, balance, coordination, cognitive functions

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# PROFESSIONAL TRAINING IN ADAPTED PHYSICAL ACTIVITY: A SYSTEMATIC LITERATURE REVIEW

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Abstract ID: 135

Aim

Although the National Council of Education has been recommending the insertion of the Adapted Physical Activity (APA) course in the curricula of Physical Education undergraduate courses for the past 30 years, only recently (Brazil, 2018) it has become mandatory. Professional training is a recurring theme in researches involving APA in Brazil. Therefore, it was essential to understand how this topic has been addressed in the international literature. Aiming to support the investigations and national public policies targeting professional training in APA, it was necessary to verify how this scenario has been established in other countries. Thus, the aim of the study was to analyze the scientific production about professional training in the area of APA in an international perspective.

Methods

A systematic literature review was carried out involving the interface "Adapted Physical Activity" and "Professional Training". For data collection, the following criteria were considered: must be an original article (full paper); must be published in peer-reviewed journals; must be published in English; must involve PE teacher training at undergraduate level. Various database were accessed, these including SPORTDiscus, Bireme, PubMed and Scielo, with no delimitation of period. The searches were carried out on November 2018. This review was based on the criteria proposed by PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-analyzes (MOHER et al., 2009). After reading the titles and the abstracts, it was excluded: repeated occurrences and articles that were not in accordance with the described criteria. The selected studies were read in full and processed through thematic analysis. Having initially sourced 122 articles, 16 papers published from 2002 to 2018 proved suitable to the selection criteria. The totality of articles was produced by North America and Europe, with a greater concentration of research in the USA.

Results

Results were grouped into three main categories: (1) the need of association between theory and practice, enabling direct contact with people with disabilities during preservice training, increasing hands on experiences and practical opportunities with this audience; (2) the importance of positively influencing the feelings and attitudes of the undergrad students towards people with disabilities; (3) the infusion of knowledge: this model proposes the integration knowledge and understanding of disability issues and infuses them throughout the undergraduate physical education curriculum. Most studies (87.5%) were based on the perception of students during their initial training process, highlighting the importance of giving voice to those who have the responsibility to act directly in the inclusion of people with disabilities in general schools.

Conclusions

The need to expand the opportunity and to increase practical experiences with this clientele was unanimous.

Keywords: Professional Training. Adapted Physical Activity. Literature Review

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# PROVIDE A SUPPORT FOR THE WHEELCHAIR ATHLETE'S LUMBAR SPINE BY ADJUSTING THE WHEELCHAIR BACKREST

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Abstract ID: 224

Background

Wheelchair athletes spend most of their time in wheelchairs for training and daily activities. At the same time, most of them lack part of the sensory or motor functions, so it is difficult for them to adjust the entire trunk posture by themselves, especially for those low-level athletes whose wheelchairs lean backward to meet the stability requirements. These are associated with lumbar spine problems, such as posterior pelvic tilt, lumbar scoliosis, or low back pain. Therefore, in this experiment, the wheelchair backrest is adjusted by adding backrest support at T12 and L5-S1. The wheelchair users can better position the pelvis and lumbar spine Even if they sit in a wheelchair for a long time. To simplify the system, we add another group that only supports L5. Objective: The present study aimed to assess the effects of spine and pelvis position and pain level in a group of wheelchair users by giving support on T12 and L5-S1 of wheelchair backups.

Methods

A convenience sample of wheelchair users (n = 13, 11 males and 2 females), the mean age of 35.4 years (SD 13.2, range 15–60), average trauma 4.9 years (SD 4.9, range 1-17) were randomly divided into 2 groups. Group 1 (n=7) added a backrest with a one-support point at L5-S1 based on sitting posture and height in the wheelchair, group 2 (n=6) added a backrest with two support points at L5-S1 and T12 while sitting on their wheelchairs. The Visual Analogue Scale (VAS) for low back pain was measured at baseline and after a 1-month intervention.

Results

All individuals completed the study. The findings from this study demonstrated that wheelchair users randomized to either 2-point support (L5-S1 and T12) or 1-point support (L5-S1) displayed a drop in pain level ($p < .05$). Moreover, 2-point support led to greater improvements in pain level compared to 1-point support ($p < .05$). The pain level of the first group decreased by an average of 1.9, and the second group decreased by an average of 2.7.

Discussion

The backrest will cause interference and drop during high-intensity training and competition, so this research only added it to the living wheelchair. Two-point support backrest at T12 and L5-S1 can better reduce the pain level, and users felt more comfortable. However, it is difficult to achieve full waist support during the competition. One-point backrest support at L5 can also effectively reduce the pain level but not as much comfortable.

Keywords: Wheelchair athletes, Biomechanics, Low back pain, Sports wheelchair improvements

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# THE PROCESSES OF BECOMING A GUIDE RUNNER IN A BLIND MARATHON CLUB AS A COMMUNITY OF PRACTICE

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[1]Tokai University, [2]Hokkaido University

Abstract ID: 67

Aim

In order to promote sport in which non-disabled people are required to help with the practice for disabled people (e.g., Blind Sport), the education and nurture of supporters is of vital importance. The primary purpose of this study was to discover the processes whereby non-disabled people became guide runners for a blind marathon. Method A case study was conducted at the blind marathon club in Sapporo, Japan. The main research questions were: 1) What kinds of guide running methods are practiced? 2) What kinds of guidance is given to non-disabled people who have newly joined the club? 3)Through which processes do non-disabled people typically become a guide-runner? 4) How is the club involved in these processes?

Methods

The authors conducted interviews with eight blind runners and ten guide runners from the running club. In addition, participant observation was used to experience the processes of becoming a guide runner through direct observation. The survey period was from July 2019 to January 2021. The survey data was analyzed using the" community of practice" and "legitimate peripheral participation" with reference to the framework developed by Jean Lave & Etienne Wenger (1991).

Results

New non-disabled members of the club go through the following steps to be coached in guide running: 1) They watch an example of guide running and learn about it by jogging along with a model guide runner. 2)They experience quasi blind running guided with non-disabled guide runners, wearing an eye mask. 3)They start guide running with an experienced guide runner. 4)Finally, they guide a blind runner by themselves without the help of other guide runners. At first, non-disabled people are in the position of being guided by the blind runners. However, they learn the basic techniques through repeatedly experiencing the eye mask running and guide running. Moreover, the more they understand about blind runners' impairment and individual needs, the more their way of guiding becomes specially adapted to individual blind runners.

Discussion

To be a guide runner, non-disabled runners are not only required to learn the basic techniques, but they also need to be able to relinquish the basics in some instances, adapting and upgrading their techniques to the specific needs of individual blind runners. To this end, it is very important for guide runners to deepen their relationship with blind runners and be able to promote communication in order to grasp and understand the needs of their blind runner charges. Making this process more effective is the blind marathon club as a community of practice. The authors discovered that the more the club consists of blind runners and guide runners with various levels of running ability and experience, and the more the blind runners and their guides are combined and run together in each training session regardless of running or guide running experience, the more the non-disabled guide runners are nurtured and the blind marathon thereby promoted.

Keywords: blind marathon; fieldwork; community of practice; legitimate peripheral participation

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The International Council of Sport Science and Physical Education is hosting a social event at the Online ISAPA 2021!

Wednesday 16th June 16:00-17:00 EEST – Finland
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