

International Symposium of  
the Jockey Club “Sports without Limits”  
Youth Empowerment Programme cum  
**ASAPE 2022 HONG KONG**  
Conference Programme & Abstract Book

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香港中文大學  
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## SPEAKERS

### Keynote Speaker



**Ms Catherine CARTY**

Ms Catherine Carty is the UNESCO Chair Manager on Inclusive Sport in MTU. She leads a global consortium to advance the inclusive policy actions of UNESCO's sport work. She focuses on advancing human rights, sustainable development and the principle of no one left behind. Catherine led a three-day session at Expo2020 Dubai on this topic bringing together UN and multi-lateral agencies, Governments, the Sports Sector, development banks, and human rights institutions. Catherine is strategically involved in advancing UNESCO's Fit for Life flagship. She was on the guidelines development group of WHO's 2020 Physical Activity and Sedentary Behaviour Guidelines. Catherine sits on the steering group for Measuring Sports Contribution to the Sustainable Development Goals; the advisory group of the Centre of Sport and Human Rights; the UN Interagency Group for Sport for Development and Peace; the Global Action on Disability (GLAD) Network; #WeThe15 Steering Group, and the OECD Towards an integrated policy approach advisory group.

#### **Title of Presentation:**

Adapted Physical Education – Human Rights and Sustainable Development

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#### **Abstract:**

Since 2015 all global policies in sport, physical education and physical activity have united in their mission to advance sustainable development goals and human rights. Regional, national, and organisational policies and strategies are increasingly aligned with this mission. By integrating sport, physical education and physical activity into education, health, inclusion and empowerment policies and programmes, sports-based solutions are at the centre of human experience in the 21st century.

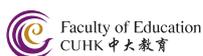
"Sport is at the crossroad of all SDGs & should be at the core of development agendas".

Gabriella Ramos Assistant Director – General for the Social and Human Sciences of UNESCO

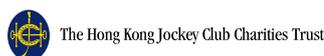
October 2021 #FinanceinCommon2021 side event on Sport and SDGs

While not explicitly referenced as a goal or target, 'sport' is included in paragraph 37 of the declaration. This is as significant as any individual goal or target: Sport is also an important enabler of sustainable development. We recognize the growing contribution of sport to the realization of development and peace in its promotion of tolerance and respect and the contributions it makes to the empowerment of women and of young people, individuals and communities as well as to health, education and social inclusion objectives (UN 2015, p13).

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# SPEAKERS

## Keynote Speaker

Abstract (Continued)

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The 2030 Agenda declares that realizing the ambitious goals and targets will profoundly improve both the lives of all people and the world in general. The SDGs were built on a bedrock of human rights. They are relevant across all counties and all people, with flexibility for nationally or sectorally relevant prioritization of goals and targets. Achieving the goals is the responsibility of many stakeholders, paragraph 52 calls on 'we the people' to join in the 15-year journey, explicitly citing the scientific and academic community as key agents, while paragraph 53 emphasizes the importance of youth in this Agenda. All sectors and all people can play a role and Agenda 2030 declares that its success will be determined by the extent to which this buy-in is achieved (UN, 2015). This passes the baton to us in the higher education sector to play our part and this session will outline the extent to which APA, physical education, physical activity and sport professional preparation programs can help in realizing the SDG's and enabling people to access their rights in and through sport.

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## SPEAKERS

### Keynote Speaker



**Professor Martin BLOCK**

Professor Martin Block is a Professor in the Department of Kinesiology at the University of Virginia, where he directs the Kinesiology for Individuals with Disabilities (KID) Program. Professor Block is the author of over 100 peer-reviewed articles, 20 chapters in books, and 5 books on physical education for children with disabilities. His research focuses on inclusion of children with disabilities in general physical education and promoting physical activity in children with autism spectrum disorder. Professor Block is the past President of the International Federation of Adapted Physical Activity (IFAPA), and he has been a consultant with Special Olympics International.

#### **Title of Presentation:**

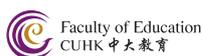
Using Paralympic School Day as a Model for a Professional Development for Physical Educators

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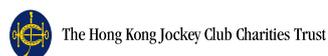
#### **Abstract:**

The successful inclusion of children with disabilities into general physical education depends in large part on the attitudes and competence of the general physical education (PE) teachers. Unfortunately, many PE teachers report that their undergraduate preparation was insufficient when it comes to including children with disabilities (Wilson et al., 2020). In-service professional development is one way to provide specific information about inclusion that can make up for the lack of training during undergraduate training. The purpose of this paper is to present a guide for using the Paralympic School Day (PSD) program, a disability awareness program targeting school-age children without disabilities, as a means for developing an in-service PE teacher training. The paper begins with a summary of PSD and contact theory, on which PSD was based. This is followed by specific information on how to develop a PSD-focused in-service training using Paralympians and PSD activity stations as a means of reducing prejudicial beliefs and helping GPE teachers understand the importance of supporting students with disabilities in their programs.

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## SPEAKERS

### Keynote Speaker



**Professor Dale ULRICH**

Professor Dale Ulrich is an emeritus professor in Movement Science in the School of Kinesiology at the University of Michigan. He has published more than 90 peer reviewed journal articles and made more than 200 research and professional presentations at national and international conferences. In the past 5 years, his research publications have been cited by other researchers more than 3,500 times. Professor Dale Ulrich has been awarded International Fellowships to train many European & Asian graduate students in Adapted Physical Activity research and assessment: Palacky University in the Czech Republic, the Catholic University in Belgium, The Norwegian University of Sport Science in Oslo Norway, The University of Dortmund in Germany, East China Normal University in Shanghai China, & Beijing Sport University in China.

#### **Title of Presentation:**

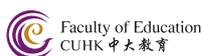
TGMD-3: Measurement, Applications, and Research Involving Children with Developmental Disabilities

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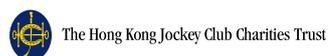
#### **Abstract:**

I will discuss the Developmental Sequence of Physical Activity Skills and how experience drives improvements over age. The acquisition of fundamental motor skills is a facilitator of healthy development in cognition, social skills, emotions, and future physical activity engagement. A critical component of advancing children's movement skills is assessment. The Test of Gross Motor Development-3 will be presented with training on how to administer and score the test. Key strategies to assist test administrators to administer and score the test reliably will be presented. A brief discussion will follow on the value and use of the standard error of measurement in interpreting a child's test score. Needed future research will be presented. The most important research is to replicate all of the current research involving children with a developmental disability. No one study proves anything. We need to replicate and publish the results before we can have increased confidence in our research findings.

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## SPEAKERS

### Keynote Speaker



**Professor Chia Liang Andy TSAI**

Professor Tsai is a faculty member in the National Cheng Kung University of Taiwan for Exercise Science and Cognitive Neurophysiology Laboratory. My research is not only interested in children diagnosed with motor impairments but also extends to the elderly, especially those who present with neurodegenerative diseases. Exercise and neurocognitive/biochemical parameters are main variables in my experiments. The central challenge of all of my works is to better understand whether physical exercise leading to improved physical fitness may have non-pharmacological remediate effects on the functional integrity of the brain and neurocognitive functions, and further slow/retard the progress of these diseases in individuals with disabilities.

#### **Title of Presentation:**

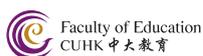
Neurocognitive Benefits of Exercise in Children with Developmental Coordination Disorder

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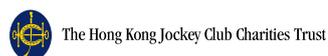
#### **Abstract:**

Children with developmental coordination disorder (DCD) is a group who show motor impairment in the absence of any known physical disorder, mental retardation, developmental delay, and low IQ. However, their motor clumsiness is severe enough to significantly interfere with their ability to engage in daily/sporting activities and academic achievement. Children with DCD have been demonstrated to show definite impairments in not only motor control but also neural constraints and perceptual or perceptual-motor functioning as compared to typically developing children. In this talk, motor-free visual perceptual skills and neurocognitive performance (e.g., behaviour and EEG event-related potentials) on visuospatial attention paradigms with voluntary or reflexive orienting and a visuospatial working memory task in children with DCD will be introduced. In addition, adapted table tennis, soccer, and aerobic training programs to investigate the effects of different exercise interventions targeted at deficits in the brain networks involved in endogenous and exogenous visuospatial attention and working memory for such children will also be stated.

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## SPEAKERS

### Keynote Speaker



**Professor David LEGG**

Professor David Legg is a Professor at Mount Royal University in Calgary, Canada. As a volunteer he is the Past President of the Canadian Paralympic Committee and past board member for the 2015 Pan Parapan American Games in Toronto. David has also served on the International Paralympic Committee's Sport Science Committee and is the current President of the International Federation of Adapted Physical Activity and CoChair of the Calgary Adapted Hub Powered by Jumpstart. More recently as a consultant, David worked with the Calgary BidCo for the 2026 Olympic and Paralympic Games.

#### **Title of Presentation:**

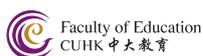
Did We Jump on the Wrong Bandwagon? Challenging our Assumptions about Inclusion in High Performance Sport for Persons with Disabilities

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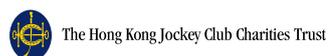
#### **Abstract:**

Multiple social changes will impact the future of the sport for persons experiencing disability including those at ranging from the grassroots to high performance contexts. In this presentation, Dr Legg will review global social changes and consider how they may impact the future of adapted physical activity and in particular inclusion and finally whether we 'jumped on the wrong bandwagon'.

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## SPEAKERS

### Invited Speaker



**Professor Chunxiao LI**

Professor Chunxiao Li is currently a professor of adapted physical activity, School of Physical Education and Sports Science, South China Normal University (SCNU). Before joining SCNU, he was a faculty member at Nanyang Technological University, Singapore. His research primarily focuses on adapted physical activity, disability inclusion, mindfulness, and talent development environment. He has been involved in more than 20 research projects and published over 70 research articles in respected journals including *Adapted Physical Activity Quarterly*. He has a Google h-index of 24. He is a serving board member for the Asian Society for Adapted Physical Education and Exercise. He also sits at the editorial board for several peer-reviewed English journals.



**Professor Yandan WU**

Professor Yandan Wu is currently a "Bao Chen Distinguished Professor" of adapted physical activity, School of Physical Education & Sports Science, Fujian Normal University. Yandan is one of the top adapted physical activity scholars in China. She is currently a vice president of the Asian Society for Adapted Physical Education and Exercise. She is also the deputy director of the Sports Committee of China Research Society for the Development of Disabled Persons. Over the past ten years or so, she has published several books and over 50 research articles on adapted physical activity. She has received over 20 competitive research grants, including the National Social Science Fund (China). She has also received several prestigious awards from the local government.

#### **Title of Presentation:**

Adapted Physical Activity Research and Program Development in Mainland China

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#### **Abstract:**

It is estimated that there are approximately 85 million people with disabilities in mainland China. Over the past few decades, human rights of Chinese people with disabilities have been further protected. For example, children with disabilities have the right to education and over 95% of them have access to compulsory education for free. Meanwhile, it is witnessed that the adapted physical activity research and programs have been developed. In this invited presentation, the status quo of adapted physical activity research and program development will be presented. This will include, but not limited to, areas such as legislation and policies, physical education for children with disabilities, physical activity participation, disabled sport, issues and challenges, and future directions. It is hoped that this presentation will help the audience to have a better understanding on adapted physical activity research and program development in mainland China. It is also hoped that the presentation will inspire future adapted physical activity research and practices in mainland China and beyond.

## SPEAKERS

### Invited Speaker



**Professor Omar HINDAWI**

Professor Omar Hindawi is a professor and former Dean at the Hashemite University in Jordan in the Faculty of Physical Education and Sport Science. He is the president of Middle East Federation of Adapted Physical Activity (MEFAPA) and a representative of the Middle East region in the International Federation of Adapted Physical Activity (IFAPA). Hindawi is the innovator of the Global Application of Adapted Exercises for persons with Disabilities in six international languages. He was appointed as Supervisor and Expert of Sports for Persons with Disabilities for the Middle East by DAAD the Germany Organization. He published tens articles and a book "Creativity in Selection of Physical and Sport Activities for Persons with Disability".

#### **Title of Presentation:**

New Technology and Application Related to Sport Rehabilitation for Persons with Disabilities

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#### **Abstract:**

Making new and modern technologies improves the sporting experience of all Persons with Disabilities more applicable and enjoyable is a main concern of this presentation. It touches the lives of countless participants of PWD in the physical activities how to overcome difficulties while communication is a challenge.

Our presentation shows a few innovative devices and applications such as:

- The wireless communication system to aid referee boost the deaf and visual impaired athletes to undergo an ever entertaining and joyful sporting and athletic practice.
- The Adapted Exercises Application is a better choice for rehabilitation presented in six most spoken languages in the world and touching on the main disabilities.
- A universal translation of the 23 Paralympic Sports regulations and rules into Arabic, and the Braille language with audio template for the hearing-impaired abilities.
- AI is supposed to serve the sector of the PWD sports and involvement utilizing computer aided software to ease the life and athletic activities of PWD.

## SPEAKERS

### Invited Speaker



**Dr Jooyeon JIN**

Dr Jooyeon Jin is an Associate Professor in Department of Sport Science at University of Seoul (UOS), Korea where he serves as a director of Adapted Physical Activity and Health Laboratory. He completed his Ph.D. in 2012 at Oregon State University and worked as an assistant professor in Department of Exercise and Sport Science at University of Wisconsin-La Crosse, USA before joining UOS in 2016. His research and scholarship seek to promote health-enhancing physical activity for individuals with disabilities through diverse approaches. Dr Jin has served in many external committees related to APA and four editorial boards of academic journals.

#### **Title of Presentation:**

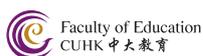
Promoting Health-Enhancing Physical Activity for Individuals with Disabilities

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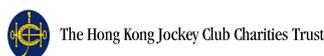
#### **Abstract:**

Individuals experiencing disability conditions compose a large proportion of the world's population and the number is increasing. According to Henfling and Leslie (2022), approximately 690 million people in the Asia-Pacific region have some type of disability conditions. Individuals with disabilities experience health disparities, including lower self-rated health, higher rates of health-reducing behaviours, and lower use of preventive health services. Indeed, it is well documented health status of individuals with disabilities is lower than their counterparts without disabilities. Physical activity programs are low-cost interventions and reduce health disparities in this population, but many individuals with disabilities still do not regularly participate in physical activity. The major reason for this phenomenon could be individuals with disabilities experience impairments, activity limitations, and participation restrictions along with a variety of personal and environmental barriers (World Health Organization, 2001). Considering unique characteristics and special needs of individuals with disabilities, innovative physical activity programs are necessary to reduce the health disparities and ultimately to promote the overall health of them. This lecture will address the importance of health-enhancing physical activity and provide research-based strategies to promote health-enhancing physical activity of individuals with disabilities.

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## INVITED SYMPOSIUM 1



**Dr Jane YU**

Dr Jane Yu is ZJU100 Young Professor at the Department of Sport and Exercise Science, College of Education, Zhejiang University in China. Her research interests include motor skills development and the development of effective physical activity interventions for health promotion in children and youth with and without disabilities. Jane has published her work widely in top-tier international peer-reviewed journals and participated in a series of cutting-edge research projects. Currently, Jane is Secretary General of the Asian Society for Adapted Physical Education and Exercise (ASAPE) and Board Member of the Early Childhood Development Committee of the China Maternal and Child Health Association.

### **Title of Presentation:**

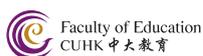
A Synopsis on Adapted Physical Activity in Asian Regions

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### **Abstract:**

ASAPE dedicates to the conduct, implementation, and dissemination of research in the practice of adapted physical activity (APA) across countries in Asia, thus to support physical activity opportunities for all individuals with special needs. The main purpose of Invited Symposium 1 is to provide an overview of the advancements and/or challenges in APA research and practice in key ASAPE member countries or regions, which is a traditional session at ASAPE international symposiums biennially. Five invited speakers from different Asian regions will give an overview of the development status and trends in APA on their local contexts. They are Professor Tomoyasu Yasui from Japan, Professor Selina Khoo from Malaysia, Professor Yong-ho Lee from Korea, Professor Chien-yu Pan from Taiwan, and Dr Weerawat Limroongreungrat from Thailand. Dr Jane Jie Yu from mainland China serves as the moderator in this session. Various aspects of APA including but not limited to academic research activities and practice, curriculum development, educational/training programmes for personnel, and policies will be covered to demonstrate the diversity and universality in the development of APA in Asia. Looking back on the past is a guide to the future. Future directions and efforts to further promote APA in Asia will be discussed.

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## INVITED SYMPOSIUM 2



**Dr Kwok NG**

Dr Kwok Ng holds the Docent title, "Health Promotion and Adapted Physical Activity" and dual affiliations with the University of Limerick, Ireland and University of Eastern Finland, Finland. He is the current Vice President of the European Federation of Adapted Physical Activity (<https://eufapa.eu>) and the International Federation of Adapted Physical Activity (<https://ifapa.net>). He is the guest editor of Adapted Physical Activity Quarterly special issue on the extension to the Global Matrix on Physical Activity Report cards for Children and Adolescents with disabilities. Follow his works and social media on <https://linktr.ee/Kwok>.

### **Title of Presentation:**

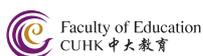
Global Matrix Para Report Cards on Physical Activity of Children and Adolescents with Disabilities: Asian Perspectives

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### **Abstract:**

"The Global Matrix on Para Report Cards of Physical Activity of children and adolescents with disabilities or chronic conditions is a parallel project to the Global Matrix from the Active Healthy Kids Global Alliance, where data specific to disabilities or chronic conditions are used to grade countries and regions in 10 indicators of physical activity behaviors (Overall Physical Activity, Organise Sport, Active Travel, Active Play, Physical Fitness, Sedentary Behavior) or influences (School, Family & Friends, Community & Environment, Government). Based on the best and latest evidence, grades range from A (>80%) to F (<20%), and where there is insufficient data to make a grade, there is a rating of inconclusive (INC). For the first time, several countries came together to be part of this Global Matrix on Para Report Card exercise. In this symposium, national grades are presented from Hong Kong (Prof Cindy Sit), South Korea (Dr Jeongmin Lee), the Philippines (Mr Mary Grace Kang), and Israel (Prof Shayke Hutzler). In addition to reporting grades, presenters describe what the grades mean for their respective jurisdiction, before a panel discussion about the Para Report Cards."

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# CONFERENCE PROGRAMME

## AUGUST 4, 2022 THURSDAY

Time	Session
1300-1345	Enter Teams
1400	Opening Ceremony by MC
1400-1405	Welcoming Address by Prof. Rocky Sung-chi TUAN Vice-Chancellor and President The Chinese University of Hong Kong
1405-1410	Address by Ms Michelle Mei-sheung LI, JP Permanent Secretary for Education Education Bureau, HKSAR Government
1410-1415	Address by Mr Sam LONI Programme Director at the UN Sustainable Development Solutions Network (SDSN) Founder and Director of Global Schools
1415-1420	Address by Dr Gabriel Matthew LEUNG, GBS, JP Executive Director Charities and Community, The Hong Kong Jockey Club
1420-1425	Address by Prof. Cindy SIT Chairperson of the Department of Sports Science and Physical Education, The Chinese University of Hong Kong Chairperson of the Organizing Committee of the International Symposium President of the Asian Society for Adapted Physical Education and Exercise
1425-1430	Project Video and Group Photo
1430-1515	<b>Keynote Speech 1</b> <b>Title:</b> Adapted Physical Education – Human Rights and Sustainable Development <b>Presenter:</b> Ms Catherine CARTY, UNESCO Chair Project Manager, Munster Technological University, Ireland <b>Moderator:</b> Prof. Cindy SIT, Department of Sports Science and Physical Education, The Chinese University of Hong Kong
1515-1600	<b>Keynote Speech 2</b> <b>Title:</b> Using Paralympic School Day as a Model for a Professional Development for Physical Educators <b>Presenter:</b> Prof. Martin BLOCK, Department of Kinesiology, University of Virginia, USA <b>Moderator:</b> Prof. Stephen WONG, Hong Kong Physical Education Teachers Society
1600-1615	Transition
1615-1730	<b>Invited Symposium 1</b> <b>Title:</b> A Synopsis on Adapted Physical Activity in Asian Regions <b>Presenters:</b> Prof. Tomoyasu YASUI, Hokkaido University of Education, Japan Prof. Yong-ho LEE, Seoul National University, South Korea Dr Selina KHOO, University of Malaya, Malaysia Prof. Chien-yu PAN, National Kaohsiung Normal University, Taiwan Dr Weerawat LIMROONGREUNGRAT, Mahidol University, Thailand <b>Moderator:</b> Dr Jane YU, Department of Sport and Exercise Science, Zhejiang University, China

# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

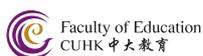
Time	Session		
0845	Enter Teams		
0900-0945	<p><b>Keynote Speech 3</b>  <b>Title:</b> TGMD-3: Measurement, Applications, and Research Involving Children with Developmental Disabilities  <b>Presenter:</b> Prof. Dale ULRICH, School of Kinesiology, University of Michigan, USA  <b>Moderator:</b> Professor David LEGG, Department of Health and Physical Education, Mount Royal University, Canada</p> <p>Enter Teams</p>		
0945-1015	<p><b>Invited Speech 1</b>  <b>Title:</b> Adapted Physical Activity Research and Program Development in Mainland China  <b>Presenters:</b> Prof. Chunxiao LI, School of Physical Education and Sports Science, South China Normal University, China and Prof. Yandan WU, School of Physical Education and Sports Science, Fujian Normal University, China  <b>Moderator:</b> Dr Jane YU, Department of Sport and Exercise Science, Zhejiang University, China</p> <p>Enter Teams</p>		
1015-1030	Transition		
1030-1200	<p><b>Oral Presentation:</b></p> <table border="0"> <tr> <td style="vertical-align: top;"> <p><b>Parallel Session 1</b>  <b>Moderator:</b> Prof. Gilda UY, College of Human Kinetics, University of Philippines, Philippines</p> <p>Enter Teams</p> <p>.....</p> <p><b>Parallel Session 2</b>  <b>Moderator:</b> Prof. Andy TSAI, Institute of Physical Education, Health and Leisure Studies, National Cheng Kung University, Taiwan</p> <p>Enter Teams</p> <p>.....</p> <p><b>Parallel Session 3</b>  <b>Moderator:</b> Dr Veni KONG, Department of Physical Education and Sports Science, National Technological University, Singapore</p> <p>Enter Teams</p> </td> <td style="vertical-align: top;"> <p><b>Parallel Session 4</b>  <b>Moderator:</b> Prof. Raymond SUM, Department of Sports Science and Physical Education, The Chinese University of Hong Kong</p> <p>Enter Teams</p> <p>.....</p> <p><b>Parallel Session 5</b>  <b>Moderator:</b> Dr Juanita CHEUNG, Department of Sports Science and Physical Education, The Chinese University of Hong Kong</p> <p>Enter Teams</p> </td> </tr> </table>	<p><b>Parallel Session 1</b>  <b>Moderator:</b> Prof. Gilda UY, College of Human Kinetics, University of Philippines, Philippines</p> <p>Enter Teams</p> <p>.....</p> <p><b>Parallel Session 2</b>  <b>Moderator:</b> Prof. Andy TSAI, Institute of Physical Education, Health and Leisure Studies, National Cheng Kung University, Taiwan</p> <p>Enter Teams</p> <p>.....</p> <p><b>Parallel Session 3</b>  <b>Moderator:</b> Dr Veni KONG, Department of Physical Education and Sports Science, National Technological University, Singapore</p> <p>Enter Teams</p>	<p><b>Parallel Session 4</b>  <b>Moderator:</b> Prof. Raymond SUM, Department of Sports Science and Physical Education, The Chinese University of Hong Kong</p> <p>Enter Teams</p> <p>.....</p> <p><b>Parallel Session 5</b>  <b>Moderator:</b> Dr Juanita CHEUNG, Department of Sports Science and Physical Education, The Chinese University of Hong Kong</p> <p>Enter Teams</p>
<p><b>Parallel Session 1</b>  <b>Moderator:</b> Prof. Gilda UY, College of Human Kinetics, University of Philippines, Philippines</p> <p>Enter Teams</p> <p>.....</p> <p><b>Parallel Session 2</b>  <b>Moderator:</b> Prof. Andy TSAI, Institute of Physical Education, Health and Leisure Studies, National Cheng Kung University, Taiwan</p> <p>Enter Teams</p> <p>.....</p> <p><b>Parallel Session 3</b>  <b>Moderator:</b> Dr Veni KONG, Department of Physical Education and Sports Science, National Technological University, Singapore</p> <p>Enter Teams</p>	<p><b>Parallel Session 4</b>  <b>Moderator:</b> Prof. Raymond SUM, Department of Sports Science and Physical Education, The Chinese University of Hong Kong</p> <p>Enter Teams</p> <p>.....</p> <p><b>Parallel Session 5</b>  <b>Moderator:</b> Dr Juanita CHEUNG, Department of Sports Science and Physical Education, The Chinese University of Hong Kong</p> <p>Enter Teams</p>		

# CONFERENCE PROGRAMME

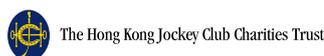
## AUGUST 5, 2022 FRIDAY

Time	Session		
1200-1300	Break		
1300-1400	<p><b>ASAPE General Assembly</b>  <b>Secretary:</b> Dr Jane YU, ASAPE Secretary General</p> <p>Enter Teams</p>		
1400-1415	Transition		
1415-1500	<p><b>Keynote Speech 4</b>  <b>Title:</b> Neurocognitive Benefits of Exercise in Children with Developmental Coordination Disorder  <b>Presenter:</b> Prof. Andy Chia-liang TSAI, Institute of Physical Education, Health and Leisure Studies, National Cheng Kung University, Taiwan  <b>Moderator:</b> Dr Jooyeon JIN, Department of Sport Science, University of Seoul, South Korea</p> <p>Enter Teams</p>		
1500-1530	<p><b>Invited Speech 2</b>  <b>Title:</b> New Technology and Application Related to Sport Rehabilitation for Persons with Disabilities  <b>Presenter:</b> Prof. Omar HINDAWI, Faculty of Physical Education and Sport Science, Hashemite University, Jordan  <b>Moderator:</b> Prof. Yijian YANG, Department of Sports Science and Physical Education, The Chinese University of Hong Kong</p> <p>Enter Teams</p>		
1530-1545	Transition		
1545-1730	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><b>Poster Presentation</b>  <b>Moderators:</b> Prof. Yijian YANG, Department of Sports Science and Physical Education, The Chinese University of Hong Kong and Dr Clare YU, Department of Rehabilitation Sciences, The Hong Kong Polytechnic University</p> <p>Enter Teams</p> </td> <td style="width: 50%; vertical-align: top;"> <p><b>Video Presentation</b>  <b>Moderator:</b> Dr Wendy HUANG, Department of Sport, Physical Education and Health, Hong Kong Baptist University</p> <p>Enter Teams</p> </td> </tr> </table>	<p><b>Poster Presentation</b>  <b>Moderators:</b> Prof. Yijian YANG, Department of Sports Science and Physical Education, The Chinese University of Hong Kong and Dr Clare YU, Department of Rehabilitation Sciences, The Hong Kong Polytechnic University</p> <p>Enter Teams</p>	<p><b>Video Presentation</b>  <b>Moderator:</b> Dr Wendy HUANG, Department of Sport, Physical Education and Health, Hong Kong Baptist University</p> <p>Enter Teams</p>
<p><b>Poster Presentation</b>  <b>Moderators:</b> Prof. Yijian YANG, Department of Sports Science and Physical Education, The Chinese University of Hong Kong and Dr Clare YU, Department of Rehabilitation Sciences, The Hong Kong Polytechnic University</p> <p>Enter Teams</p>	<p><b>Video Presentation</b>  <b>Moderator:</b> Dr Wendy HUANG, Department of Sport, Physical Education and Health, Hong Kong Baptist University</p> <p>Enter Teams</p>		

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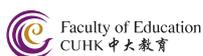


# CONFERENCE PROGRAMME

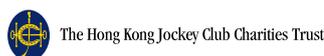
## AUGUST 6, 2022 SATURDAY

Time	Session						
0845	Enter Teams						
0900-0945	<p><b>Keynote Speech 5</b></p> <p><b>Title:</b> Did We Jump on the Wrong Bandwagon? Challenging our Assumptions about Inclusion in High Performance Sport for Persons with Disabilities</p> <p><b>Presenter:</b> Prof. David LEGG, Department of Health and Physical Education, Mount Royal University, Canada</p> <p><b>Moderator:</b> Prof. Martin BLOCK, Department of Kinesiology, University of Virginia, USA</p>						
0945-1015	<p><b>Invited Speech 3</b></p> <p><b>Title:</b> Promoting Health-Enhancing Physical Activity for Individuals with Disabilities</p> <p><b>Presenter:</b> Dr Jooyeon JIN, Department of Sport Science, University of Seoul, South Korea</p> <p><b>Moderator:</b> Prof. Chunxiao LI, School of Physical Education and Sports Science, South China Normal University, China</p>						
1015-1030	Transition						
1030-1145	<p><b>Invited Symposium 2</b></p> <p><b>Title:</b> Global Matrix Para Report Cards on Physical Activity of Children and Adolescents with disabilities: Asian Perspectives</p> <p><b>Presenters:</b></p> <table border="0"> <tr> <td>Dr Kwok NG, University of Easter Finland, Finland and University of Limerick, Ireland</td> <td>Ms Mary Grace KANG, University of the Philippines, Philippines</td> </tr> <tr> <td>Prof. Cindy Hui-Ping SIT, The Chinese University of Hong Kong</td> <td>Mr Jeong Min LEE, Yonsei University, South Korea</td> </tr> <tr> <td></td> <td>Prof. Yeshayahu HUTZLER, The Academic Center Levinsky-Wingate, Israel</td> </tr> </table> <p><b>Moderator:</b> Dr Kwok NG, University of Easter Finland, Finland and University of Limerick, Ireland</p>	Dr Kwok NG, University of Easter Finland, Finland and University of Limerick, Ireland	Ms Mary Grace KANG, University of the Philippines, Philippines	Prof. Cindy Hui-Ping SIT, The Chinese University of Hong Kong	Mr Jeong Min LEE, Yonsei University, South Korea		Prof. Yeshayahu HUTZLER, The Academic Center Levinsky-Wingate, Israel
Dr Kwok NG, University of Easter Finland, Finland and University of Limerick, Ireland	Ms Mary Grace KANG, University of the Philippines, Philippines						
Prof. Cindy Hui-Ping SIT, The Chinese University of Hong Kong	Mr Jeong Min LEE, Yonsei University, South Korea						
	Prof. Yeshayahu HUTZLER, The Academic Center Levinsky-Wingate, Israel						
1145-1230	Closing Ceremony and Award Presentation						

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# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

### Oral Presentation - Parallel Session 1

**Moderator:** Prof. Gilda UY, College of Human Kinetics  
University of Philippines, Philippines

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#### Oral Presentation 1

**Topic:** "Reasons" for Participation: Model Construction of Influencing Factors of College Girls' Participation in Sports – An Exploratory Analysis Based on Grounded Theory

**Presenter:** Mr Chuchen-man LIU, School of Physical Education and Health, Nanning Normal University, China; Ms Fang-femal ZHAO, School of Physical Education and Health, Nanning Normal University, China

#### Oral Presentation 2

**Topic:** Competitive Sport and Intellectual Disabilities - Case Study on Table Tennis Coaching towards Paralympics

**Presenter:** Mr Toshihiro TANAKA, Graduate School of Asia-Pacific Studies, Waseda University, Japan

#### Oral Presentation 3

**Topic:** The Associations between Accelerometer-measured Physical Activity Levels and Mental Health in Children and Adolescents with Intellectual Disabilities during the COVID-19 Pandemic

**Presenter:** Ms Wen YANG, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

#### Oral Presentation 4

**Topic:** Inclusion of students with Disabilities in Physical Education in Saudi Arabia: A qualitative Study of Mothers' perspectives

**Presenter:** Dr Majed M. ALHUMAID, Department of Physical Education, College of Education, King Faisal University, Saudi Arabia

#### Oral Presentation 5

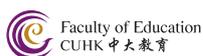
**Topic:** Co-shaping the Ableness through Climbing Together: A Preliminary Study on the Intersubjective Meaning Making Between People with Intellectual Disabilities and the Social Others in a Public Bouldering Gym in Japan

**Presenter:** Dr Xiaojie TIAN, University of Tsukuba/Japan Society for the Promotion of Sciences, Japan

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# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

### Oral Presentation - Parallel Session 2

**Moderator:** Prof. Andy TSAI

Institute of Physical Education, Health and Leisure Studies,  
National Cheng Kung University, Taiwan

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#### Oral Presentation 6

**Topic:** Rehabilitative Exercise Interventions to Improve Functions of Individuals with Amputation: A Systematic Review

**Presenter:** Ms Hoo Kyung LEE, Department of Sport Science, University of Seoul, South Korea

#### Oral Presentation 7

**Topic:** The Change in Empathy Levels of Japanese Undergraduate students in Adapted Physical Education Course

**Presenter:** Ms Cynthia HALL, Department of Physical Education, Health and Sport Sciences, University of Tsukuba, Japan

#### Oral Presentation 8

**Topic:** Understanding Moderate to Vigorous Physical Activity of Adults with a Developmental Disability based on Model of Goal-directed Behavior

**Presenter:** Dr Jung-Hwa CHOI, Department of Sport and Health Sciences, Kyungsoong University, South Korea

#### Oral Presentation 9

**Topic:** Women's Wheelchair Basketball in Tokyo Paralympic Games 2020: a Preliminary lineup analysis

**Presenter:** Ms Jiahui WANG, Faculty of Human Movement and Rehabilitation Sciences, KU Leuven, Belgium

#### Oral Presentation 10

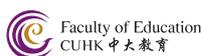
**Topic:** Meeting the 24-hour Movement Guidelines and Health-Related Outcomes among Youth with Autism Spectrum Disorder: A Seven-country Observational Study

**Presenter:** Prof. Chunxiao LI, School of Physical Education and Sports Science, South China Normal University, China

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# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

### Oral Presentation - Parallel Session 3

**Moderator:** Dr Veni KONG  
National Technological University, Singapore

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#### Oral Presentation 11

**Topic:** Results from South Korean 2022 Report Card on Physical Activity for Children and Adolescents with Disabilities

**Presenter:** Prof. Jeongmin LEE, Department of Sport Industry Studies, Yonsei University, South Korea

#### Oral Presentation 12

**Topic:** The Relationship between Physical Activity and Psychological Well-being in College Students

**Presenter:** Mr Jiang-Chuan YE, Department of Sport and Exercise Sciences, Zhejiang University, China

#### Oral Presentation 13

**Topic:** Biomechanical Determinants of the Severity of Soccer Heading in Male College Players in Hong Kong

**Presenter:** Mr Hong Yat LI, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

#### Oral Presentation 14

**Topic:** Physical Activity and Mental Health in Children and Youth during the COVID-19 Pandemic: A Systematic Review

**Presenter:** Mr Bo-Wen LI, Department of Sport and Exercise Science, College of Education, Zhejiang University, China

#### Oral Presentation 15

**Topic:** N of Pane: An important Criterion for Estimating the Ability of Coordination

**Presenter:** Dr Yim-Taek OH, Frontier Research Institute of Convergence Sports Science, Yonsei University, South Korea

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# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

### Oral Presentation - Parallel Session 4

**Moderator:** Prof. Raymond SUM,  
Department of Sports Science and Physical Education,  
The Chinese University of Hong Kong

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#### Oral Presentation 16

**Topic:** Biomechanical Effect of Lower-Limb Sport Garments on Sport-specific Movement Patterns  
**Presenter:** Mr Cheuk Yin HO, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

#### Oral Presentation 17

**Topic:** Does Motor Proficiency Matter for Sedentary Behaviors and Physical Activity in Youth  
**Presenter:** Dr Jane YU, Department of Sport and Exercise Sciences, Zhejiang University, China

#### Oral Presentation 18

**Topic:** Pilot Study on the Use of Ambidexter as a Gamification Therapy  
**Presenter:** Dr Sing Yee Jernice TAN, School of Sports, Health and Leisure Republic Polytechnic, Singapore

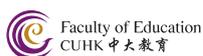
#### Oral Presentation 19

**Topic:** Effects of a School-based Physical Activity Intervention for Obesity and Health-related Physical Fitness in Adolescents with Intellectual Disability  
**Presenter:** Dr Aiwei WANG, College of Physical Education, Yangzhou University, China

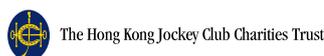
#### Oral Presentation 20

**Topic:** The Effects of Instrument-assisted Soft Tissue Mobilization Exercise on Range of Motion, Flexibility, and Balance in Axe Kick of Taekwondo  
**Presenter:** Ms Yuet Yan LAI, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

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# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

### Oral Presentation - Parallel Session 5

**Moderator:** Dr Juanita CHEUNG,  
Department of Sports Science and Physical Education,  
The Chinese University of Hong Kong

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#### Oral Presentation 21

**Topic:** Mechanisms Underlying the Effects of Physical Activity on Mental Health in Children and Adolescents with Special Educational Needs: A Systematic Review and Meta-analysis  
**Presenter:** Ms Chang LIU, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

#### Oral Presentation 22

**Topic:** Effect of Systematic Training on Morpho-Physiological Parameters of Indian Young Male Kayakers and Canoers  
**Presenter:** Ms Tamoghni MANNA, Post-Graduate Department of Physiology, Hooghly Mohsin College, The University of Burdwan, India

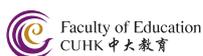
#### Oral Presentation 23

**Topic:** Ocular Findings in Children and Adolescents with Neurodevelopmental Disorders: A Systematic Review and Meta-analysis  
**Presenter:** Ms Sima DASTAMOOZ, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

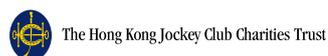
#### Oral Presentation 24

**Topic:** Analysis of Supply and Demand Interests of Disabled Sports Public Services and Optimal Design of Supply Chain  
**Presenter:** Ms Qiao ZHANG, Department of Public Physical Education, Minjiang University, China

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# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

### Poster Presentation

**Moderators:** Prof. Yijian YANG

Department of Sports Science and Physical Education,  
The Chinese University of Hong Kong and

Dr Clare YU

Department of Rehabilitation Sciences,  
The Hong Kong Polytechnic University

**Poster Presentation 1**

**Topic:** Effectiveness of Tai chi-muscle Power Training On Limits of Stability, Motor Proficiency, Lower Limb Muscular Performance and Falls in Children with Developmental Coordination Disorder: a Randomized Controlled Trial

**Presenter:** Dr Shirley Siu Ming FONG, Department of Health and Physical Education, The Education University of Hong Kong, Hong Kong

**Poster Presentation 2**

**Topic:** Effects of Sport Game Outcomes on Acute Affective Response in Injured Veterans

**Presenter:** Assistant Prof. Gwang-Yon HWANG, Department of Health and Human Performance, Fort Lewis College, USA

**Poster Presentation 3**

**Topic:** Development and Validation of a Curriculum-related Physical Activity Recall Questionnaire

**Presenter:** Ms Yi-Juan LU, Department of Sports Science, College of Education, Zhejiang University, China

**Poster Presentation 4**

**Topic:** Health-promoting Lifestyles and Quality of Life for Parents of Children with Intellectual and Developmental Disabilities

**Presenter:** Dr So-Yeun KIM, Department of Kinesiology and Sports Studies, Ewha Womans University, South Korea

**Poster Presentation 5**

**Topic:** High Intensity Interval Training Using Whole-body Exercises Decreases Pancreatic Fat Content and improves Glycaemic Control of Type 2 Diabetes Patients

**Presenter:** Mr Feng CHEN, College of Health Science, Wuhan Sports University, China

**Poster Presentation 6**

**Topic:** A journey to Being: A Family Phenomenological Study on the Water Leisure Sports Experience

**Presenter:** Mr Sang-Hyun HWANG, Department of Physical Education, Korea National Sports University, South Korea

**Poster Presentation 7**

**Topic:** The Effect of Dance Programs on Balance Ability in a Special Needs Class

**Presenter:** Dr Ikeda CHISA, Department of Special Needs Education, Hokkaido University of Education, Japan

**Poster Presentation 8**

**Topic:** Study on the Characteristics of Physical Activity Level of Primary School Students Aged 9–12 in the North of Jiangsu Province from the Perspective of Inter-Generational Transmission

**Presenter:** Mr Jing XU, School of Physical Education, China University of Mining and Technology, China

**Poster Presentation 9**

**Topic:** A Pilot of Quantitative and Qualitative Evaluation Methods of change of direction in amputee soccer

**Presenter:** Ms Aya MIYAMOTO, Department of Physical Education, International Pacific University of Japan, Japan

**Poster Presentation 10**

**Topic:** Simple Strength-Training Exercise to Increase the Grip Strength in Cerebral Palsy Children

**Presenter:** Dr EKAWATI, Febriani Fajar, Faculty of Sports, Universitas Sebelas Maret, Indonesia

# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

Poster Presentation (Continued)

### Poster Presentation 11

**Topic:** Development and implementation of Adapted Physical Activity curriculum in China Special Education Schools

**Presenter:** Dr Yuting SONG, College of Physical Education and Health, East China Normal University, China

### Poster Presentation 12

**Topic:** Psychometric Properties of the Chinese Version of Both Child-report and Parent-proxy Report PedsQL Among Children with Disabilities

**Presenter:** Dr Ming Hui Venus LI, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Poster Presentation 13

**Topic:** A Model-Based Approach to Teaching Adapted Physical Education

**Presenter:** Mr Hongmin LEE, Department of Adapted Physical Education, Yong In University, South Korea

### Poster Presentation 14

**Topic:** Physical Activity Program for Overcoming Hyperactive Behavior of Autism Spectrum Disorder in Inclusive School Indonesia

**Presenter:** Dr Joko YUWONO, Special Education Program, Sebelas Maret University, Indonesia

### Poster Presentation 15

**Topic:** Associations Between Physical Activity, Sleep, and Executive Function in Children with ADHD: A Pilot Study

**Presenter:** Dr Fenghua SUN, Department of Health and Physical Education, The Education University of Hong Kong, Hong Kong

### Poster Presentation 16

**Topic:** Effect of 8-week Adapted Yoga Exercise on Balance in Postmenopausal Women

**Presenter:** Dr Ka Wai Jacky CHAN, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Poster Presentation 17

**Topic:** Mind-body Interventions for Health Outcomes in Individuals with Autism Spectrum Disorder: A Systematic Review

**Presenter:** Mr Jia-Fu HUANG, School of Physical Education and Sports Science, South China Normal University, China

### Poster Presentation 18

**Topic:** Effort in Promoting the Inclusion Program in School Physical Education and Physical Activity in Indonesia: Professional Development for the Inclusive PE Teacher.

**Presenter:** Dr Agus MAHENDRA, Department of Primary School of Physical Education Teacher Education, Universitas Pendidikan Indonesia, Indonesia

### Poster Presentation 19

**Topic:** Effects of Teacher Socialization on Choosing Adapted Physical Education as a Career

**Presenter:** Mr Hongmin LEE, Department of Adapted Physical Education, Yong In University, South Korea

### Poster Presentation 20

**Topic:** The "Fascinatingness" of the Adapted Sport and the Uniqueness of the Sport Space: A Case Study of the Blind Marathon

**Presenter:** Mr Shun UETA, School of International Cultural Relations Department of Community Development, Tokai University, Japan

### Poster Presentation 21

**Topic:** Moderate-to-vigorous Physical Activity and Fundamental Movement Skills Proficiency in Children with and without ADHD: Associations with Sleep Quality

**Presenter:** Mr Xiao LIANG, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Poster Presentation 22

**Topic:** Identifying of Physical Activity, Gross Motor Coordination and Balance in Down Syndrome

**Presenter:** Dr Sri SUMARTINTINGSIH, Department of Sports Science, Universitas Negeri Semarang, Indonesia

# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

Poster Presentation (Continued)

### Poster Presentation 23

**Topic:** Building a Cross-Curricular Teaching Model for Paralympic Education -Focusing on the Relationship between Health and Physical Education and Moral Studies in Japan

**Presenter:** Mr Tomioka HIROTAKE, Hiroshima University Mihara Junior High School , Japan

### Poster Presentation 24

**Topic:** Effects of School-based Intervention on Motor Performance, Physical Activity, and Mental Health Among Children with Developmental Coordination Disorder: A Randomised Controlled Trial

**Presenter:** Prof. Cindy Hui Ping SIT, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Poster Presentation 25

**Topic:** A Meta-Analysis of Effectiveness on Interventions to Improve Balance, Gait, and Upper Extremity Function in Persons with Stroke.

**Presenter:** Prof. Jaewon LEE, Department of Special Physical Education, Yongin University, South Korea

### Poster Presentation 26

**Topic:** Development of Augmentative and Alternative Communication (AAC) Systems in Learning Adapted Physical Education for Autistic Children

**Presenter:** Dr Lalan ERLANI, Department of Special Education, Faculty of Education, Jakarta State University, Indonesia

### Poster Presentation 27

**Topic:** Exploring On-site Responses to Non-face-to-face Classes by the Sports Association for the Differently Abled and Proposing Policies According to COVID-19

**Presenter:** Mr Kyung Hwan KIM, Department of Physical Education, Seoul National University/Doctoral Student, South Korea

### Poster Presentation 28

**Topic:** The Actual Sports Activities of People with Disabilities Based on the Questionnaire Survey on Lifelong Learning

**Presenter:** Mr Naoya KONDO, Department of Social Management, Health Sciences University of Hokkaido, Japan

### Poster Presentation 29

**Topic:** The Relationship of Sense of Agency (SoA) in Children with Developmental Coordination Disorder - Creating a Gross Motor Function Measuring Tool in Physical Activity

**Presenter:** Mr Hyun Woo JUNG, Department of Physical Education, Health and Sport Sciences, University of Tsukuba, Japan

### Poster Presentation 30

**Topic:** Social Power of Coaches as Perceived by Japanese Female Wheelchair Basketball Players: Factors that define satisfaction with coaches

**Presenter:** Prof. Chihiro KANAYAMA, College of Social Sciences, Ritsumeikan University, Japan

### Poster Presentation 31

**Topic:** Revision and validation of Chinese version of The Youth Experience Survey

**Presenter:** Ms Tian-Tian ZHANG, Nanning Normal University, China

### Poster Presentation 32

**Topic:** A Study on the Rehabilitation Exercise for Upper Limb Impairment : A systematic review

**Presenter:** Mr Mun Cheong CHOI, Exercowork, South Korea

### Poster Presentation 33

**Topic:** A Meta-Analysis of a Randomized Controlled Trials on Rehabilitation Exercise for Children with Cerebral Palsy in Korea

**Presenter:** Dr Jooyeon JIN, Department of Sports Science, University of Seoul, South Korea

### Poster Presentation 34

**Topic:** The Latest Development of the International Paralympic Committee Anti-Doping Code and China's Response

**Presenter:** Mr Cheng LU, School of Sports Science, Fujian, Normal University, China

# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

Poster Presentation (Continued)

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### Poster Presentation 35

**Topic:** A Systematic Literature Review on the Effects of Participation in Exercise and Nutrition Intervention for People with Bipolar Disorder

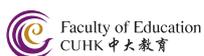
**Presenter:** Ms Yena BONG, Department of Kinesiology and Sports Studies, Ewha Womans University, South Korea

### Poster Presentation 36

**Topic:** Inclusive Physical Activities in the Local Event "Everyone's Play Place" in Sapporo, Japan

**Presenter:** Prof. Tomoyasu YASUI, Department of Special needs Education, Hokkaido University of Education, Japan

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# CONFERENCE PROGRAMME

## AUGUST 5, 2022 FRIDAY

### Video Presentation

**Moderator:** Dr Wendy HUANG

Department of Sport, Physical Education and Health,  
Hong Kong Baptist University

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#### Video Presentation 1

**Topic:** Monitor athlete's Psychological and Physical Health by Using RESTQ Scale

**Presenter:** Prof. Le-zhen GONG, Department of Physical Education, Weifang University, China

#### Video Presentation 2

**Topic:** Results from the First Philippine Report Card on Physical Activity for Children and Adolescents with Disabilities

**Presenter:** Assistant Prof. Mary-Grace KANG, Department of Physical Therapy, University of the Philippines, Philippines

#### Video Presentation 3

**Topic:** Scoping Review of Instruments Measuring Physical Activity among Children and Adolescents with Obesity: A Preliminary Report

**Presenter:** Ms Audrey Anne Dimaculangan ESGUERRA, Department of Physical Therapy, University of the Philippines, Philippines

#### Video Presentation 4

**Topic:** Study protocol: A Pretest-Posttest Experimental Study on the Effect of a Self-Determination Theory-based Exergaming Program on Building PA Motivation and Improving MVPA Levels of Children and Adolescents with Autism Spectrum Disorders

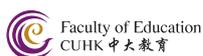
**Presenter:** Ms Mi AN, Department of Human Health Science, Kyoto University, Japan

#### Video Presentation 5

**Topic:** The Relationship between Physical Activity and Mental Health among Adolescents with Attention-deficit/Hyperactivity Disorder

**Presenter:** Ms Tin-Wai YU, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

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# ABSTRACT

## ORAL PRESENTATION 1

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### Title:

"Reasons" for Participation: Model Construction of Influencing Factors of College Girls' Participation in Sports – An Exploratory Analysis Based on Grounded Theory

### Author (presenting author underlined):

LIU CM, School of Physical Education and Health, Nanning Normal University, Nan Ning  
ZHAO FF, School of Physical Education and Health, Nanning Normal University, Nan Ning

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### Background/Aim:

Female college students have good sports cognition and relatively rich physical education resources and sports facilities, but their sports participation is relatively low at present. What are the influencing factors? It is worth further studying.

### Methods:

Grounded theory, as a qualitative research method, aims to establish theories based on empirical data. Researchers generally do not have theoretical assumptions before the beginning of the research, and directly start from actual observation, summarize the experience from the original data, and then rise to the theory. This is a bottom-up approach to building substantive theories, that is, to find core concepts reflecting social phenomena on the basis of systematic data collection, and then construct relevant social theories through the connections between these concepts.

### Results and Conclusions:

In this study, 15–20 female non-sports students were interviewed to obtain their psychological, physical quality, natural environment, participation conditions, living environment and other factors as to why they were not enthusiastic about participating in sports activities. Then, on the basis of the research paradigm of grounded theory, interview data are coded through three levels of open coding, spindle coding and selective coding, and the three characteristics of grounded theory are: With the support of "continuous comparison – theoretical sampling – theoretical saturation", qualitative analysis was carried out with the way of memo writing, inductive, deductive and retroactive inference was made to conclude the middle-level theory of influencing factors of female college students' sports participation, and the theoretical model of influencing factors of female college students' sports participation was established.

# ABSTRACT

## ORAL PRESENTATION 2

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### Title:

Competitive Sport and Intellectual Disabilities – Case Study on Table Tennis Coaching Towards Paralympics

### Author (presenting author underlined):

TANAKA T, Graduate School of Asia-Pacific Studies, Waseda University, Tokyo, Japan

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### Background/Aim:

Although there has been an increasing interest in parasports in Japan, there is a lack of research and study on para-sports, particularly, regarding coaching of players with intellectual disability (ID). The aim of this research is to deepen the understanding on realities and challenges in coaching of players with ID.

### Methods:

Literature review, participatory observation, and semi-structured interviews of six (two women and four men) coaches who met the criteria of having participated international para table tennis competitions during 2018–2019. A Quantitative analysis of textual data was conducted using KH Coder.

### Results:

Coaches have used informal modalities including learning by doing, listening to guardians, and self-learning to acquire skills and knowledge to coach players with ID. It requires more time and repetitions for players with ID to master a new technique. Players with ID understand better when a visual mode of communication is used. Some players with ID possess chronic illness and experienced bullying. Most coaches facilitate self-determination of the players with ID and pay attention to their career development. There is a lack of information sharing among coaches.

### Conclusion:

Learning by doing is the main modality of acquiring knowledges for coaching players with ID. Coach plays a significant role in socialization through sport while the parents play a key role in socialization into sport. While it is important to treat both players with ID and those without ID in a same manner, care needs to be taken in coaching players with ID as they often suffer from sickness, bullying and misunderstandings. Experience/knowledge sharing among coaches needs to be promoted.



# ABSTRACT

## ORAL PRESENTATION 3

### Title:

The Associations Between Accelerometer-Measured Physical Activity Levels and Mental Health in Children and Adolescents with Intellectual Disabilities During the COVID-19 Pandemic

### Author (presenting author underlined):

YANG W, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
SIT CHP, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
LI MH, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
YU JJ, Department of Sport and Exercise Science, Zhejiang University, China  
WONG SHS, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
SUM RKW, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Background/Aim:

Compared with children and adolescents with typical development, those with intellectual disabilities (IDs) are found to be less physically active and have poorer mental health such as quality of life (QoL) and self-concept (SC). This study aims to examine the associations between the accelerometer-measured physical activity (PA) levels and mental health in children and adolescents with IDs during the COVID-19 pandemic.

### Methods:

Children and adolescents aged between 6 and 17 years with mild and moderate IDs (N=117) from 10 special schools in Hong Kong were included during the COVID-19 pandemic. PA levels were measured by the accelerometer and determined by quartiles (with Q1 as the reference category), allowing for testing a linear trend across the quartiles.

### Results:

Light PA was positively associated with school QoL (mean difference [MD] Q2 vs Q1 =10.68,  $p<0.05$ ), vigorous PA with total QoL (MD Q3 vs Q1 =10.48,  $p<0.05$ ), and moderate PA with appearance SC (MD Q4 vs Q1 =1.38,  $p<0.05$ ). Considering the importance of moderate-to-vigorous PA (MVPA) and SC to QoL, participants with high MVPA and SC had better social QoL than those with low MVPA and SC (MD =17.92,  $p<0.05$ ), and male participants with mild ID and a higher parental education level had higher levels of PA and QoL than their counterparts.

### Conclusion:

PA was positively associated with mental health in children and adolescents with IDs during the COVID-19 pandemic. Future research should aim to improve their PA levels and mental health by considering personal and environmental factors.

# ABSTRACT

## ORAL PRESENTATION 4

### Title:

Inclusion of Students with Disabilities in Physical Education in Saudi Arabia: A Qualitative Study of Mothers' Perspectives

### Author (presenting author underlined):

ALHUMAID MM, Department of Physical Education, College of Education, King Faisal University, Al-Ahsa, 31982, Saudi Arabia

AL-SARI AR, Department of Physical Education, College of Education, King Faisal University, Al-Ahsa, 31982, Saudi Arabia

KHOO S, Centre for Sport and Exercise Sciences, Universiti Malaya, Kuala Lumpur 50603, Malaysia

### Background/Aim:

The inclusion of students with disabilities in physical education is an international trend. Even though parents play a significant role in the success of inclusion in physical education, there is limited research on the perspective of parents, especially mothers of students with disabilities about inclusion, especially in Saudi Arabia. To address this paucity, the present study sought to explore the perspectives of Saudi mothers of students with disabilities towards the inclusion of their children in physical education.

### Methods:

Six Saudi mothers of students with different types of disabilities (autism spectrum disorder: n=1; Down syndrome: n=2; hearing impairment: n=2; intellectual disability: n=1) aged 36 to 60 years voluntarily took part in face-to face semi-structured interviews. The interviews were transcribed and analysed using thematic analysis.

### Results:

Two main themes emerged about Saudi mothers' perspectives toward the inclusion of their children with disabilities in physical education: (i) having only a vague understanding of inclusion in physical education, and (ii) having positive attitudes towards their children's inclusion in physical education.

### Conclusion:

The findings highlight the need for greater efforts to promote awareness of inclusion in physical education among Saudi mothers of children with disabilities and the behavioural, health, and social benefits of inclusion in physical education for children with disabilities.

# ABSTRACT

## ORAL PRESENTATION 5

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### Title:

Co-shaping the Ableness through Climbing Together: A Preliminary Study on the Intersubjective Meaning Making Between People with Intellectual Disabilities and the Social Others in a Public Bouldering Gym in Japan

### Author (presenting author underlined):

TIAN X, University of Tsukuba/Japan Society for the Promotion of Sciences, Tsukuba, Japan  
SAWAE Y, University of Tsukuba, Tsukuba, Japan

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### Background/Aim:

In recent years, increased efforts have been made to develop new sports opportunities for people with intellectual disabilities taking their needs into account, whereas how to assess the needs of people with intellectual disabilities remain large unknown. Adopt the concept of "intersubjectivity", this study explores this challenge by considering the needs as mutual meaning making in the process of ableness co-shaping between people with intellectual disabilities and the social others. Focusing on a bouldering project developed through an industry-university collaboration in Japan, we ask three questions: how the supporters (program staff) and participants (people with intellectual disabilities) interacted with each other; how they had made progress through climbing together; and what kind of achievements have been made together in this sports program.

### Methods:

The body movements and the interactions between supporters (n=6) and participants (n=7) during the bouldering program are recorded in digital pictures (n=635) follow the time sampling method. The forms of interactions (e.g., joint attentions) are coded for further analysis in six conditions, i.e., climbing, observing, instructing, cheering, conversation, and resting.

### Results:

Several kinds of meaning makings through different forms of joint attentions (e.g., reading the holders and climbing routes, or the mutual body expressions on cheering in different conditions) have been confirmed.

### Conclusion:

Findings of this study highlight the generative feature of needs of people with intellectual disabilities, which could be accessed and assessed through sports programs that involving their full embodied participations and free interactions with the social others.

# ABSTRACT

## ORAL PRESENTATION 6

### Title:

Rehabilitative Exercise Interventions to Improve Functions of Individuals with Amputation: A Systematic Review

### Author (presenting author underlined):

LEE H, Department of Sport Science, University of Seoul, Seoul, South Korea

KIM J, Department of Sport Science, University of Seoul, Seoul, South Korea

MIN E, Department of Sport Science, University of Seoul, Seoul, South Korea

JIN J, Department of Sport Science, University of Seoul, Seoul, South Korea

### Background/Aim:

Regular physical activity (PA) participation of people with amputation has meaningful impact on their daily functioning and health conditions. The role of rehabilitative exercise after post-acute rehabilitation at the hospital is critical for the independent PA participation, but evidence-based rehabilitative exercise programs are lacking in Korea. Therefore, this study analysed rehabilitative exercise programs for people with amputation using systematic literature review to provide scientific rationale for developing effective programs.

### Methods:

Literature search targeted Korean or English academic papers published from 2010 to 2021 using KISS, RISS, KMBASE, Academic Search Complete, PubMed and ERIC using PICO-TSS was conducted. Searching key words contained physical activity, exercise, rehabilitation and daily living with amput\*. Only experimental studies with rehabilitative exercise programs were included.

### Results:

According to PRISMA, 1820 papers were initially selected, but finally 24 papers were selected. All the papers employed pre-post comparative designs. As a result, ambulation (n=6), multi-component training (n=6), mirror therapy (n=5), mobile device or technology-based activity (n=4), low back strengthening (n=2) and sports and mental practice (n=1) programs were identified. Those programs were implemented at university, hospital or house settings. In addition, ambulation or mobility, balance, postural control, prosthetic control, function of residual or amputated limb, pain, psychological factors or muscle function and physical strength were manipulated as targeted dependent variables in those programs.

### Conclusion:

The study findings may guide future research to develop sustainable evidence-based rehabilitative exercise programs, so that people with amputation can independently participate in PA to improve their everyday functions and maintain healthy lifestyles.



# ABSTRACT

## ORAL PRESENTATION 7

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**Title:**

The Change in Empathy Levels of Japanese Undergraduate Students in Adapted Physical Education Course

**Author (presenting author underlined):**

HALL C, Department of Physical Education, Health and Sport Sciences, University of Tsukuba, Tsukuba, Japan

SAWAE Y, Department of Physical Education, Health and Sport Sciences, University of Tsukuba, Tsukuba, Japan

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To foster inclusion, "Empathy" is an important social and emotional skill necessary to improve relations between groups and to reduce discrimination toward minority groups. Empathy is defined as having the important distinction of feeling 'with' another as opposed to feeling 'for' another. Adapted Physical Education fosters goals that promote inclusion. Adapted physical education foster the same goals, the purpose of this study is to understand if Empathy levels of Japanese undergraduate students change after taking Adapted Physical Education Basic Instructor course. To investigate the change in empathy levels in Japanese undergraduate students after taking an Adapted PE course an empathy scale called the Interpersonal Reactivity Index-Japan was used at T University with 78 students. The scale was giving to the students 4 separate times. Pretest and posttest measurements were analysed using SPSS. Empathy levels increased from scale 1 to scale 2 and also from scale 1 to scale 3. There was no significant increase from scale 2 to scale 3. There was a significant decrease from scale 3 to scale 4. The results suggest that having both lecture and practical class sessions increases empathy levels of students. Adapted PE Basic course does increase Empathy levels of Japanese students that take the course. When lectures are combined with practical sessions Empathy levels increasing is significant, so combining the course with both lecture and practical sessions are encouraged. Further investigation of the curriculum structure as well as investigation as to why empathy levels decreased after the introduction of the research laboratory activities.

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# ABSTRACT

## ORAL PRESENTATION 8

### Title:

Understanding Moderate to Vigorous Physical Activity of Adults with a Developmental Disability Based on Model of Goal-Directed Behavior

### Author (presenting author underlined):

CHOI JH, Department of Sport and Health Sciences, Kyungsoong University, Busan, Korea

CHOI SJ, Department of Sport and Health Sciences, Kyungsoong University, Busan, Korea

JIN J, Department of Sport Science, University of Seoul, Seoul, Korea

### Background/Aim:

The purpose of this study was to explore predictors of objectively measured moderate to vigorous physical activity (MVPA) in adults with a developmental disability based on Model of Goal-oriented Behavior (MGB).

### Methods:

A total of 128 adults with intellectual disability or autism spectrum disorder (<18yrs) were purposefully recruited. Study participants were asked to complete a paper-based questionnaire, and to wear a GENEActiv accelerometer daily for 9-days to objectively measure MVPA. Multiple regressions were performed to analyse predictive power of the MGB variables on the objectively measured MVPA levels.

### Results:

MVPA level for male participants was higher than female participants about 3.19% and 1.19%, while sedentary level for female was 6.6% higher than male. Regarding the predictive power of the MGB variables, perceived behavioral control ( $\beta=.436$ ,  $p<.001$ ), positive anticipate emotions ( $\beta=.237$ ,  $p<.01$ ), attitudes ( $\beta=.193$ ,  $p<.05$ ), negative anticipate emotions ( $\beta=-.150$ ,  $p<.01$ ), and past behaviors ( $\beta=.131$ ,  $p<.05$ ) all significantly predicted desire ( $R^2=.68$ ). Also, it was revealed that desire ( $\beta=.572$ ,  $p<.001$ ), and past behavior ( $\beta=-.175$ ,  $p<.05$ ) significantly predict behavioral intentions ( $R^2=.46$ ). Recent past behavior ( $\beta=.284$ ,  $p<.001$ ) was a strong predictor of MVPA ( $R^2=.076$ ), but behavioral intentions, perceived behavioral control, and past behavior were not significant predictors.

### Conclusion:

MGB is probably a useful framework to understand the complex mechanism of MVPA behavior of adults with a developmental disability. However, further research efforts are necessary to investigate potential mediators and moderators, such as parental support and environmental contexts, between intentions and MVPA in this population.



# ABSTRACT

## ORAL PRESENTATION 9

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### Title:

Women's Wheelchair Basketball in Tokyo Paralympic Games 2020: A Preliminary Lineup Analysis

### Author (presenting author underlined):

WANG J, Faculty of Human Movement and Rehabilitation Sciences, KU Leuven, Belgium

TEJERO JP, Department of Health and Human Performance, Universidad Politécnica de Madrid, Spain

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### Background/Aim:

In Wheelchair Basketball (WB), after classification, every player is assigned to a given class, ranging from 1,0 up to 4,5 points, and teams are allowed to play a maximum of 14 points on court at any given time among the five players. The aim of this study was to analyze frequency, time on court and efficiency of all lineups participating in women's WB competition at the Tokyo 2020 Paralympic Games.

### Methods:

The whole female sport event (31 matches of the 10 participating teams) was studied from the Tokyo Paralympics 2020. Data for every used lineup was computed in form of time on court and efficiency (points scored minus points received) from every games' lineup analysis official report.

### Results:

A total of 1015 lineups used were used at the Tokyo Paralympics. After computing, a total of 53 lineup combinations appeared. The 1, 1.5, 3, 4, 4.5 lineup was the more efficient with a total of +111 points, followed by 1, 2, 2.5, 3.5, 4.5 (+60 points) and 1, 1.5, 3, 3.5, 4.5 (+50 points). However, the most used ones were lineups 1, 1.5, 2.5, 4.5, 4.5 (68 times, first in seconds playing with 17,668 seconds), followed by 1, 1.5, 3, 4, 4.5 and 1, 2, 3, 4, 4.

### Conclusion:

At the female competition in WB at the Tokyo Paralympic Games the lineup 1, 1.5, 3, 4, 4.5 was most efficient and second in frequency used. 1, 1.5, 2.5, 4.5, 4.5 appeared the longest and most frequent, but with questionable efficiency (0).

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# ABSTRACT

## ORAL PRESENTATION 10

### Title:

Meeting the 24-hour Movement Guidelines and Health-Related Outcomes Among Youth with Autism Spectrum Disorder: A Seven-country Observational Study

### Author (presenting author underlined):

LI C, School of Physical Education & Sports Science, South China Normal University, Guangzhou, China

HAEGELE JA, Department of Human Movement Sciences, Old Dominion University, Norfolk, US; Centre for Movement, Health, & Disability, Old Dominion University, Norfolk, US

SUN FH, Department of Health and Physical Education, The Education University of Hong Kong, Hong Kong SAR, China

TANURE ALVES ML, Faculty of Physical Education, University of Campinas, São Paulo, Brazil

ANG SHC, Sport Singapore, Singapore

LEE J, Department of Kinesiology, San José State University, San Jose, US

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HEALY S, School of Nursing, Psychotherapy and Community Health, Dublin City University, Dublin, Ireland  
HUANG WY, Department of Sport, Physical Education and Health, Hong Kong Baptist University, Hong Kong SAR, China

RINTALA P, Faculty of Sport and Health Sciences, University of Jyväskylä, Finland

TAN SYJ, School of Sports, Health and Leisure, Republic Polytechnic, Singapore

WU Y, School of Physical Education & Sports Science, Fujian Normal University, Fuzhou, China

YANG H, Baekseok University, South Korea

KARNA E, School of Educational Sciences and Psychology, University of Eastern Finland, Finland

MAENG H, College of Education & Human Development, Georgia State University, Atlanta, US

SCHLIEMANN AL, Faculty of Physical Education, University of Campinas, São Paulo, Brazil

DING D, Sydney School of Public Health, The University of Sydney, New South Wales, Australia

### Background/Aim:

Meeting daily guidelines for physical activity, screen time, and sleep duration is associated with a host of health indicators for youth. In this cross-sectional observational study, we investigated the associations between adherence to the movement guidelines and health-related outcomes among youth with autism spectrum disorder (ASD).

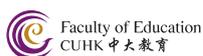
### Method:

Parents of youth with ASD (10–17 years) from seven countries and regions were invited to provide online proxy-reports for child's movement behaviours (i.e., physical activity, sleep and screen-time), and health-related outcomes (i.e., body mass index [BMI], general health, and quality of life). A series of multiple linear regression analyses were used to examine the associations between meeting movement guidelines and health-related outcomes, adjusted for covariates.

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# ABSTRACT

## ORAL PRESENTATION 10

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### Results:

The final sample consisted of 1,165 youth with ASD. Compared with youth meeting all three guidelines, a higher BMI z-score was observed in those who met no guidelines (B=0.62, P=0.04), "sedentary time only" (B=0.60, P=0.047), and "physical activity plus sleep only" (B=0.85, P=0.04). Compared with meeting all three guidelines, meeting no guidelines was associated with poorer general health (B=-0.46, P=0.02). Further, compared with youth meeting all three guidelines, a lower quality of life score was observed in those who met no guidelines (B=-0.47, P=0.02) and "physical activity only" (B=-0.62, P=0.03). Lastly, there were dose-response associations between the number of guidelines met and all three health-related outcomes (all P<sub>trend</sub> <0.05).

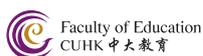
### Conclusions:

In conclusion, meeting more 24-hour movement guidelines was generally associated with more favourable health-related outcomes in youth with ASD. The low level of adherence to all three guidelines (2.0%) suggests the urgent need to promote the adoption of the guidelines in this group.

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# ABSTRACT

## ORAL PRESENTATION 11

### Title:

Results from South Korean 2022 Report Card on Physical Activity for Children and Adolescents with Disabilities

### Author (presenting author underlined):

JEON JY, Department of Sport Industry Studies, Yonsei University, Seoul, South Korea  
LEE J, Department of Sport Industry Studies, Yonsei University, Seoul, South Korea  
OH K, Department of Convergence Medicine, Yonsei University Wonju College of Medicine, Wonju, South Korea  
MIN J, Department of Convergence Medicine, Yonsei University Wonju College of Medicine, Wonju, South Korea  
GOO SY, Department of Sport Industry Studies, Yonsei University, Seoul, South Korea  
LEE EY, School of Kinesiology and Health Studies, Queen's University, Kingston, ON. Canada  
YI KJ, Faculty of Kinesiology and Recreation Management, University of Manitoba, Winnipeg, MB. Canada

HEO J, Department of Sport Industry Studies, Yonsei University, Seoul, South Korea  
LEE JS, Department of Sport Industry Studies, Yonsei University, Seoul, South Korea  
KIM DI, Division of Health and Kinesiology, Incheon National University, Incheon, South Korea  
SHIN W, Lifetime Sports Department, Korea Paralympic Committee (KPC), Seoul, South Korea  
KIM KI, Korea Institute of Sport Science, Seoul, South Korea  
Yeonsoo KIM, Department of Physical Education, Institute of Sports Science, Seoul National University, Seoul, South Korea

### Background/Aim:

South Korea has developed its first Report Card on physical activity (PA) for children and adolescents with disabilities (CAWD) in 2022 as part of the Global Matrix 4.0 initiative.

### Methods:

Firstly, nationally representative data were used to evaluate the 10 core indicators using a standard grading rubric. Then, report card evaluation committee (RCEC) representing government organizations and academics were invited to grade indicators of Report Card+.

### Results:

Each Indicator was graded as follow: Overall PA, D+; Organized Sports Participation, D-; Active Transportation, D-; Sleep, C-; Physical Fitness, D+; Government Strategies and Investments, A+; For Active Play, Sedentary Behavior, Family and Peers, School, and Community and Environment were graded INC (incomplete) due to lack of available evidence.

### Conclusion:

Given that high grade in government strategies and investments but low grades in PA-related indicator, it can be understood that government strategies and investments have not been effective in promoting PA and reducing sedentary behavior among CAWD in South Korea. This finding suggests further develop government strategies and investments which can make improvements of PA-related behaviors from the pragmatic perspectives

# ABSTRACT

## ORAL PRESENTATION 12

### Title:

The Relationship Between Physical Activity and Psychological Well-Being in College Students

### Author (presenting author underlined):

YE JC, Department of Sport and Exercise Sciences, Zhejiang University, Hangzhou, China

YU JJ, Department of Sport and Exercise Sciences, Zhejiang University, Hangzhou, China

### Background/Aim:

Previous studies have showed that regular physical activity (PA) benefits for psychological well-being. Approximately 20% of the college students in China have mental problems including anxiety and depression. Good resilience is important for maintaining an individual's mental health. The purpose of this study was to examine the associations of PA with resilience, anxiety, and depression in college students in China.

### Methods:

Using a cross-sectional design, 352 Chinese college students ( $20.8 \pm 2.18$  years, 131 males) were recruited. PA was assessed by the International Physical Activity Questionnaire-Short Form. Total PA (MET-minutes/week) and activities in different intensity levels were computed. Resilience, anxiety, and depression were measured using the Chinese version of Connor-Davidson Resilience Scale (CD-RISC), Zung's Self-rating Anxiety Scale (SAS), and Self-rating Depression Scale (SDS), respectively. Relationships among the variables were examined using Spearman rank correlation tests.

### Results:

Total PA ( $r=0.11$ ,  $p<0.05$ ) and vigorous PA ( $r=0.14$ ,  $p<0.05$ ) were positively related to CD-RISC score. CD-RISC score was negatively related to the score of SAS ( $r=-0.27$ ,  $p<0.01$ ) and SDS ( $r=-0.49$ ,  $p<0.01$ ). After controlling for age and body mass index, a positive relationship between vigorous PA ( $r=0.24$ ,  $p<0.01$ ) and CD-RISC score was only found in male students.

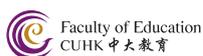
### Conclusion:

There is a positive and small relationship between PA (especially vigorous PA) and resilience in Chinese college students. Given that resilience is negatively associated with anxiety and depression, it is worth developing effective PA interventions for mental health promotion in college students in China.

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# ABSTRACT

## ORAL PRESENTATION 13

### Title:

Biomechanical Determinants of the Severity of Soccer Heading in Male College Players in Hong Kong

### Author (presenting author underlined):

LI HY, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
HO CY, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
YANG T, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Background/Aim:

Soccer is the only sport that uses head to contact ball purposefully. Current literature about soccer heading characteristic and severity was mainly conducted in western countries and the effect of technique on severity remains unclear. This study investigates the severity and mediating effect of technique in soccer heading among local male college players.

### Methods:

We conducted a lab experiment to examine head impact severity. 10 male subjects ( $22.8 \pm 1.08$  years) were recruited to perform headers for two purposes (controlling and striking) with four head contact sites (front, left, right, top) at a given ball speed. Head acceleration, head-to-torso alignment, and neck and trunk muscle activity were measured. We used one-way ANOVA and correlation to analyse how head acceleration associated with heading conditions and muscle activation.

### Results:

The peak head linear and angular acceleration ranged from 131–147  $\text{ms}^{-2}$  and 56–87  $\text{rads}^{-2}$  for controlling ball, and 202–280  $\text{ms}^{-2}$  and 97–139  $\text{rads}^{-2}$  for striking ball, respectively. Significant difference of head acceleration was shown between two purposes ( $p \leq 0.001$ ) and between front and top contact sites (Control:  $p = 0.08$ ; Strike:  $p = 0.037$ ). Head acceleration was negatively correlated with neck muscle contraction ( $r: -0.1$  -  $-0.6$ ) and trunk angle ( $r: -0.373$ ), but positively correlated with head-to-torso angle ( $r: 0.699$ ).

### Conclusion:

Striking ball by the front of head is more likely to result in stronger head acceleration, while neck muscle contraction and lesser trunk angle potentially reduce head acceleration. Soccer coaches may consider limiting heading type in youth training and stress neck contraction with proper alignment as the key technique cues.

# ABSTRACT

## ORAL PRESENTATION 14

### Title:

Physical Activity and Mental Health in Children and Youth during the COVID-19 Pandemic: A Systematic Review

### Author (presenting author underlined):

LI BW, Department of Sport and Exercise Science, College of Education, Zhejiang University, Hangzhou, China

YU JJ, Department of Sport and Exercise Science, College of Education, Zhejiang University, Hangzhou, China

YE JC, Department of Sport and Exercise Science, College of Education, Zhejiang University, Hangzhou, China

### Background/Aim:

The COVID-19 pandemic has potential impacts on physical and mental health (MH) of children and youth due to significant changes in lifestyles of people worldwide. This systematic review aimed to provide a comprehensive overview on the relationship between physical activity (PA) and mental health in children and youth including those with disabilities in the context of COVID-19.

### Methods:

Four databases (EMBASE, PsycINFO, PubMed, and Web of Science) were systematically searched to identify studies examining the relationship between PA and MH in children and youth aged 1–24 years and being published in peer-reviewed journals in English from January 2020 to December 2021. Two reviewers independently performed screening, risk of bias assessment, and data extraction for relevant parameters. The relationship between PA and MH was synthesized semi-quantitatively.

### Results:

A total of 60 studies (52 cross-sectional, 3 longitudinal, and 5 experimental design) were included. PA was consistently and positively associated with the improvement of certain psychological ill-being domains (anxiety, depression, stress, insomnia, and distress) and general psychological well-being, which was more robust in children aged 6–17 years. Evidence for preschoolers was very limited. For children and youth with disabilities, a consistent relationship between PA and MH was only found in terms of anxiety and depression.

### Conclusion:

The findings indicate a close relationship between PA and MH in children and youth, and highlight the importance of PA promotion for all children and youth during the COVID-19 pandemic. More research is warranted for preschoolers and individuals with disabilities in this research field.



# ABSTRACT

## ORAL PRESENTATION 15

### Title:

N of Pane: An Important Criterion for Estimating the Ability of Coordination?

### Author (presenting author underlined):

OH YT, Frontier Research Institute of Convergence Sports Science, Yonsei University, South Korea

JEOUNG B, Department of exercise rehabilitation, Gachon University, South Korea

MOON GS, Department of Physical Education, Yonsei University, South Korea

NOH G, Department of Software Convergence, Cheongju University, South Korea

### Background/Aim:

Estimating the ability of coordination is a controversial issue. Previous approaches have focused solely on 'time' and 'touch' as reference but there is no gold-standard measurement. Our focus on the 'flow of fingertip' is estimated by 'N of Pane,' which represents the number of panes when the fingertip traverses to reach the subsequent target on 3\*3, 5\*5, or 7\*7 grid on a computer screen. This study aims to substantiate 'N of Pane' as a suitable criterion for estimating the ability of coordination by assuming that better coordination plausibly requires fewer pane and vice versa.

### Methods:

28 Participants (18 with no impairment; 10 with physical impairment) performed a Spiral Test (ST), a Finger-Nose Test (FNT), and a Repeated Measure Test (RMT: shoulder, elbow, forearm, wrist, finger) in turn, and then performed a 3\*3, 5\*5, 7\*7 coordination test displayed on a computer screen. Target positions in coordination test were set as vertical (1,2)&(3,2); horizontal (2,1)&(2,3); left, top, right, bottom (1,1)&(3,3); right, bottom, left (1,3) &(3,1)) or random. All tests were performed three times for 20 seconds and median values were analyzed by Spearman's rank correlation using SPSS.

### Results:

Pane/N showed moderate reverse correlation with ST, FNT&RMT Shoulder in 5\*5 (-.36~- .60,  $p < .01$ ) and 7\*7 (-.33~- .55,  $p < .01$ ) with weak correlation in 3\*3 (-.34~- .46,  $p < .01$ ) and no significant correlation between Pane/N and RMT of different joints.

### Conclusion:

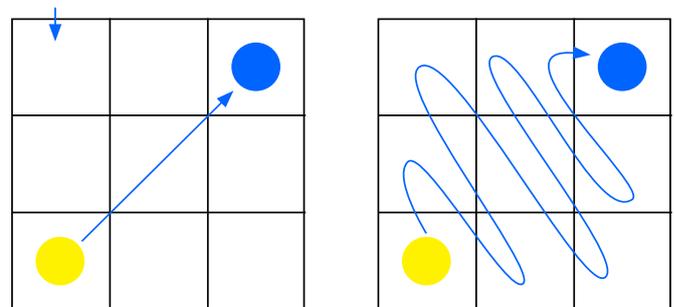
N of Pane can be considered an essential criterion for estimating the ability of coordination.

### Acknowledgement

This research is supported by the National Rehabilitation Center, South Korea (NRC-PRSRE-EQ01A).

### Appendix

Pane



When a target moves from (1,3) to (3,1), the one with the best coordination will have 3 panes. The greater the n of pane, the ability of coordination would be poorer.

# ABSTRACT

## ORAL PRESENTATION 16

### Title:

Biomechanical Effect of Lower-Limb Sport Garments on Sport-Specific Movement Patterns

### Author (presenting author underlined):

HQ CY, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
LI HY, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
SUM RKW, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
YANG Y, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Background/Aim:

Cutting and jumping in competitive sports are associated with multiplanar loading on lower limb joints, which potentially increases the risk of injury. Previous research reported inconsistent findings on whether lower-limb sport garments contribute to better performance or lower injury risk. The present study aims at investigating the effects of sport garments on lower-limb biomechanical parameters in high-impact tasks.

### Methods:

Three male subjects (24.7±2.4 years old) were recruited to perform fast, pre-planned 90° cutting and countermovement jump (CMJ) tests under four garment wearing conditions (control, knee sleeves, placebo leggings, and compression leggings). We used motion capture system and force plates to measure lower-limb biomechanical parameters including joint angle, torque, and power. Data were processed through the Plug-in Gait lower body model. The model outputs were further analysed with ground reaction force patterns and compared among different conditions.

### Results:

In cutting tests, parameters that associate with knee injury risk, such as knee abduction and internal rotation torques, changed inconsistently among the subjects under different conditions. In CMJ tests, knee range of motion (ROM) reduced by 5.2% when wearing knee sleeves (95.3±11.7°) compared with the control condition (100.5±14.6°), and hip ROM reduced by 8.1% when wearing placebo leggings (85.0±14.4°) compared with the control condition (78.1±14.3°).

### Conclusion:

Our preliminary results show that sport garments may potentially affect ROM in sport-specific movements but may be ineffective reducing knee injury risk. Further analyses with greater sample sizes are currently carried out to provide more insightful results for lower-limb sport garment designs.

# ABSTRACT

## ORAL PRESENTATION 17

### Title:

Does Motor Proficiency Matter for Sedentary Behaviors and Physical Activity in Youth?

### Author (presenting author underlined):

YU JJ, Department of Sport and Exercise Sciences, Zhejiang University, Hangzhou, China

JIN TZ, Department of Sport and Exercise Sciences, Zhejiang University, Hangzhou, China

### Background/Aim:

The purpose of this study was to determine the associations of motor proficiency (MP) with sedentary behaviors and physical activity (PA) in youth.

### Methods:

Using a cross-sectional design, the present study recruited 100 healthy Chinese youth (mean age: 19.8±1.06 years, 27 males). MP was assessed using the Bruininks-Oseretsky Test of Motor Proficiency-Second Edition with a higher total score representing better MP. The Chinese version of International Physical Activity Questionnaire-Short Form was also used to measure participants' total PA volume (MET-minute/week) over 1-week time. Each participant wore an ActiGraph GT3X+ accelerometer for consecutive 7 days to objectively assess the time spent in sedentary and PA at different intensity levels (light PA and moderate-to-vigorous PA). Correlations and hierarchical multiple regression models were performed to examine the associations of MP with sedentary time and all PA outcomes.

### Results:

Males scored significantly higher in MP and spent more time in sedentary behaviors when compared to females (both  $p < 0.05$ ). MP was positively related to total PA volume ( $r = 0.314$ ,  $p < 0.01$ ) and light PA ( $r = 0.251$ ,  $p < 0.05$ ), and was negatively related to sedentary time ( $r = -0.225$ ,  $p < 0.05$ ). After adjusting for age and sex, MP was a significant predictor for total PA volume ( $p < 0.05$ ), sedentary time ( $p < 0.01$ ), and the time spent in light PA ( $p < 0.05$ ).

### Conclusion:

Youth with poor MP are more likely to be physically inactive and engage in more sedentary pursuits. Future interventions that emphasize on the improvement of MP may be effective to combat physical inactivity and its related health problems in youth.



# ABSTRACT

## ORAL PRESENTATION 18

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**Title:**

Pilot Study on the Use of Ambidexter as a Gamification Therapy

**Author (presenting author underlined):**

TAN SY, School of Sports, Health and Leisure, Republic Polytechnic, Singapore

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**Background/Aim:**

Ambidexter is designed to improve visual perceptual abilities and fine motor skills with gamification. It trains the flexion/extension and pronation/supination of either hand. Home-based gamification allows children to have easy access to regular play therapy. The aim was to evaluate the use of ambidexter on manual dexterity skills and handgrip strength.

**Methods:**

Nine young children with developmental delays (n=9; age range: 3–6 years old) were recruited with parental consent and child assent to perform three MABC-2 manual dexterity tasks, BEERY VMI tracing exercises and Ambidexter test modules at pretest and posttest periods. Between both tests, they had 20 Ambidexter play sessions over a six-week duration. Statistical analysis was carried out using paired t-test at  $p \leq .05$ .

**Results:**

After the Ambidexter physical play therapy, the children showed visible improvement in MABC-2 results, BEERY VMI scores and some of the customised test modules such as wrist speed and grip strength. The user experience ratings of Ambidexter games were rated very good to excellent.

**Conclusion:**

Pilot testing suggested that using Ambidexter as a gamified play therapy had some positive effects on the manual dexterity skills and handgrip strength. Further follow-up study is recommended to ascertain clearer significant improvements and thus enable the validation of its effectiveness.

## ABSTRACT

### ORAL PRESENTATION 19

#### Title:

Effects of a School-Based Physical Activity Intervention for Obesity and Health-Related Physical Fitness in Adolescents with Intellectual Disability

#### Author (presenting author underlined):

WANG A, College of Physical Education, Yangzhou University, Yangzhou, China

GAO Y, Department of Sport, Physical Education and Health, Hong Kong Baptist University, Hong Kong, China

BAKER JS, Department of Sport, Physical Education and Health, Hong Kong Baptist University, Hong Kong, China

WANG J, Mass Sports Research Center, China Institute of Sport Science, Beijing, China

#### Background/Aim:

Childhood obesity accompanied by lower levels of health-related physical fitness (HRPF) is a major threat to public health. Children with intellectual disability have a higher risk of being overweight/obese and having poor HRPF levels. However, there has been relatively limited research on this population. This study aims to examine the success of a physical activity (PA) intervention for the target population.

#### Methods:

This study was a 12-week randomized controlled trial. Participants (N=30) were recruited and randomly allocated to either intervention group (IG) or waitlist control group (CG). The participants in the IG received a training program (2 sessions/week, 60 minutes/session). All participants were followed up for 12 weeks afterwards to evaluate the sustaining effects of the intervention. Study outcomes included obesity- and fitness-related outcomes. All measurements were taken at 3-time points.

#### Results:

The participants in the IG showed a significant reduction in body weight ( $p=0.002$ ) and BMI ( $p=0.001$ ) and a significant improvement in 6MWT ( $p=0.039$ ), 30-second sit-to-stand test ( $p=0.006$ ), and handgrip strength ( $p=0.003$ ) compared with the CG. However, for other obesity-related outcomes and other HRPF outcomes, no significant improvements were observed in post-test. Sustained effects were observed in body weight ( $p=0.003$ ), BMI ( $p=0.002$ ), 6MWT ( $p=0.042$ ), and 30-second sit-to-stand test, ( $p=0.002$ ) but not in handgrip strength ( $p=0.086$ ).

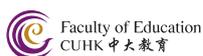
#### Conclusion:

The PA intervention can induce positive effects on reducing obesity and improving HRPF levels.

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# ABSTRACT

## ORAL PRESENTATION 20

### Title:

The Effects of Instrument-Assisted Soft Tissue Mobilization Exercise on Range of Motion, Flexibility, and Balance in Axe Kick of Taekwondo

### Author (presenting author underlined):

LAI YY, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
YANG Y, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Background/Aim:

Axe kick is one of the crucial kicking techniques in taekwondo competition. Instrument-assisted soft tissue mobilization (IASTM) is a passive exercise to reduce fatigue and enhance physical function, but its effect for non-pathological conditions, especially for taekwondo athletes has not been studied. The current research aimed to examine the effect of IASTM exercise on the range of motion (ROM), flexibility, and balance in axe kick of taekwondo young players in Hong Kong.

### Methods:

32 taekwondo players were recruited and randomly assigned into control group (20.7±1.6 years; 56% males) and intervention group (20.8±1.9 years; 68% males), in which participants received the IASTM treatment 2 sessions/week for 4 weeks. Outcomes were measured by Dartfish 7 Pro Suite software, goniometer, and Star Excursion Balance Test (SEBT) before and after the intervention.

### Results:

There was a significant effect for flexibility ( $t_{15}=4.08$ ,  $p<0.001$ ) and ROM ( $t_{15}=5.34$ ,  $p<0.001$ ) in the intervention group between pre-test and post-test. Besides, there was significant group-by-time interaction effect for balance anterior ( $F_{1,15}=2.48$ ,  $p<0.001$ ) and flexibility ( $F_{1,15}=19.1$ ,  $p<0.001$ ). However, there was no notable difference of group-by-time interaction for ROM ( $F_{1,15}=3.43$ ,  $p>0.05$ ), balance posteromedial ( $F_{1,15}=2.14$ ,  $p>0.05$ ), and balance posterolateral ( $F_{1,15}=0.14$ ,  $p>0.05$ ).

### Conclusion:

We found a positive effect of IASTM on flexibility and ROM in young taekwondo players. Our results suggest that performance of axe kicks may be enhanced through IASTM exercise. However, the effect of IASTM on balance of players with different levels should be further investigated.

# ABSTRACT

## ORAL PRESENTATION 21

### Title:

Mechanisms Underlying the Effects of Physical Activity on Mental Health in Children and Adolescents with Special Educational Needs: A Systematic Review and Meta-Analysis

### Author (presenting author underlined):

LIU C, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
LIANG X, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
SIT CHP, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Background/Aim:

Physical activity has a positive effect on a range of mental health outcomes for children and adolescents with special education needs (SEN). Despite the known health benefits of physical activity, the mechanisms underlying the effects on mental health in this group of children remain unclear. To examine the potential neurobiological, psychosocial, and behavioral mechanisms underlying the physical activity intervention effects in children and adolescents with SEN.

### Methods:

Six electronic databases (Web of science, PyscINFO, SPORTDiscus, MEDLINE, CINAHL, ERIC) were used. First, a systematic review was used to synthesize the potential neurobiological, psychosocial, and behavioral mechanisms underlying the physical activity intervention effects in children and adolescents with SEN. Second, a meta-analysis was adopted to examine the physical activity intervention effects on mental health by using a three-level meta-analytic model.

### Results:

A total of 28 studies were included in our systematic review. Results showed that neurobiological ( $\beta$  waves and  $\theta$  waves), psychosocial (physical self-perceptions and perceived social acceptance), and behavioral (motor skills and social skills) mechanisms were the most commonly found mechanisms. Based on the 18 of 28 selected studies, results of the three-level meta-analysis indicated the significant physical activity intervention effects on improved overall mental health and cognitive function and reduced mental ill-being.

### Conclusion:

Physical activity has significant effects on improving overall mental health and cognitive function, and reducing mental ill-being for children and adolescents with SEN through neurobiological ( $\beta$  waves and  $\theta$  waves), psychosocial (physical self-perceptions and perceived social acceptance), and behavioral (motor skills and social skills) mechanisms.



# ABSTRACT

## ORAL PRESENTATION 22

### Title:

Effect of Systematic Training on Morpho-Physiological Parameters of Indian Young Male Kayakers and Canoers

### Author (presenting author underlined):

MANNA T, Post-Graduate Department of Physiology, Hooghly Mohsin College, The University of Burdwan, College Road, Hooghly-712101, West Bengal, India

### Background/Aim:

Morpho-physiological and motor ability profiles are most important for giving best performance in kayaking and canoeing. Our present study was focused to analyse systematic training effect on various profiles and was carried on 11 male kayakers (n=11, age 14.13±1.40) 14 male canoers (n=14, age 14.87±1.85).

### Methods:

Body height, body weight, 60 meter run, 2.4 km run, standing broad jump, vertical jump, sit-up, push-up, arm span, bench press, bench pull, 6×10m shuttle run, overhead ball throw, Vo2 max, sit and reach (flexibility), haemoglobin tests were done by the standard procedures.

### Results:

Performing time of 60 meters run (seconds), 6 x10 meters shuttle run (sec) of male kayakers had reduced progressively and significantly from test 1 to test 8 i.e., from (9.04±0.52) to (8.16±0.42) and (16.40±0.40) to (14.17±0.83) respectively at (p<0.05). All the variables were increased statistically and significantly improved except body height (cm), body weight and arm span (cm) in case of male kayakers. The haemoglobin content in (gram %) was improved from (11.56±0.76) to (13.45±0.55). Standing broad jump (cm), sit up/min, push up/minutes increased progressively in case of male canoers from 231.86±26.84 to 264.79±22.50; 48.50±14.53 to 97.29±17.30 and from 49.29±14.53 to 125.36±21.90 respectively in our present study at (p<0.05).

### Conclusion:

Training plays a pivot role in water sports. Basic concept of two disciplines i.e., kayaking and canoeing is same, which is to push water, but the mechanics of pushing water are completely different requiring critical motor ability and body stature.



# ABSTRACT

## ORAL PRESENTATION 23

### Title:

Ocular Findings in Children and Adolescents with Neurodevelopmental Disorders: A Systematic Review and Meta-analysis

### Author (presenting author underlined):

SIT CHP, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
DASTAMOOZ S, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
THAM CCY, Department of Ophthalmology and Visual Sciences, Faculty of Medicine, the Chinese University of Hong Kong  
YAM JCS, Department of Ophthalmology and Visual Sciences, Faculty of Medicine, the Chinese University of Hong Kong  
WONG SHS, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
LI M, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Background/Aim:

Retina parameters are used as structural indicators of axonal deformities and neurodegeneration diseases. There is some evidence of the link between ocular characteristics and individuals with neurodevelopmental disorders (NDD), which could potentially allow early diagnosis. The objective of this review therefore was to examine the variations in ocular characteristics between children with autism spectrum disorder (ASD) and attention deficit hyperactivity disorder (ADHD) and their peers with typical development (TD).

### Methods:

Six databases (PubMed, Scopus, APA PsycInfo, Embase, Ebscohost, and Cochrane library) were selected for a systematic literature search from April 2007 to April 2021. The observational studies assessing and reporting at least one outcome regarding ocular characteristics in children and adolescents with ADHD or ASD aged between 6–17 years old were included. Studies in languages other than English, studies of adult or elderly human populations, and animal studies, were excluded.

### Results:

The findings of 14 studies including 468 ADHDs and 186 ASDs revealed that there were no significant differences in retinal nerve fiber layer, ganglion cell complex, and macular thickness between the ADHD group and the TD group. In subgroup analysis, significant differences in inferior ganglion cell (MD=-3.19; 95% CI=[-6.06, -0.31], p=0.03), and nasal macular thickness (MD=5.88; 95% CI=[-0.01, 11.76], p=0.05) were detected between the ADHD group and the TD group. A significant difference in pupillary light reflex (PLR) was also observed between the ASD group and the TD group (MD=29.7; 95% CI=[18.79, 40.63], p<0.001).

### Conclusion:

Existing evidence suggests a possible association between children and adolescents with ADHD or ASD and ocular characteristics. Given the limited number of studies, further research on a larger cohort is necessary to claim possible diagnosis of ADHD or ASD through ocular characteristics.

# ABSTRACT

## ORAL PRESENTATION 24

### Title:

Analysis of Supply and Demand Interests of Disabled Sports Public Services and Optimal Design of Supply Chain

### Author (presenting author underlined):

ZHANG Q, assistant professor at the Department of Public Physical Education, Minjiang University; PhD student at Universiti Teknologi MARA

### Background/Aim:

In the context of the inclusive development of the cause of the disabled in the new era, the enjoyment of sports public services by disabled groups is an important way to achieve social integration. However, the sports participation rate of 85.92 million people with disabilities is less than 10%, which is rooted in the contradiction between the growth of the disabled population and the insufficient supply capacity of sports public services. There is an urgent need to clarify the interests of the subjects and seek new breakthroughs to optimize the design of the supply Chain.

### Methods:

Based on the theoretical perspectives of new public services, good governance theory, game theory, etc., research methods such as four-quadrant analysis method are adopted. With the help of the stakeholder appeal matrix, questionnaire surveys and in-depth interviews were conducted from the aspects of disabled persons' sports organizations, facilities, activities, information, etc. Interest demands and intensity.

### Results:

The study found that official organizations are becoming more and more perfect, but social organization construction is still insufficient, facilities lack humanization and universality, sports activities have increased in number but only one type, and the number of fitness instructors has increased but the total number of fitness instructors is insufficient.

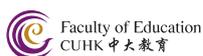
### Conclusion:

Supply-Chain Operations Reference-model) model, and optimize the design of five processes: the top-level design based on big data in planning (P); the alliance model for building social forces in procurement (S); production (M) matches demand and optimizes Resource allocation; distribution (D) implement grid governance in terms of service supply; return (R) add a third-party evaluation agency for feedback evaluation; realize a complete closed loop of co-governance, sharing, and co-construction.

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# ABSTRACT

## POSTER PRESENTATION 1

### Title:

Effectiveness of Tai Chi-Muscle Power Training on Limits of Stability, Motor Proficiency, Lower Limb Muscular Performance and Falls in Children with Developmental Coordination Disorder: A Randomized Controlled Trial

### Author (presenting author underlined):

FONG SSM, Department of Health and Physical Education, The Education University of Hong Kong, Hong Kong  
CHUNG LMY, Department of Health and Physical Education, The Education University of Hong Kong, Hong Kong  
SCHOOLING CM, School of Public Health, The University of Hong Kong, Hong Kong  
LAU EHY, School of Public Health, The University of Hong Kong, Hong Kong  
WONG JYH, School of Nursing, The University of Hong Kong, Hong Kong  
BAE YH, Korea National Rehabilitation Center, Department of Healthcare and Public Health, Rehabilitation Research Institute, Korea  
CHUNG JWY, School of Nursing and Health Studies, Hong Kong Metropolitan University, Hong Kong

### Background/Aim:

This randomized controlled trial compared the effectiveness of tai chi (TC) combined with muscle power training (MPT), TC alone, MPT alone, and no training (control) for improving the limits of stability (LOS) of balance control and motor and leg muscular performances and decreasing the incidence of falls in children with developmental coordination disorder (DCD).

### Methods:

A total of 121 children with DCD were randomly assigned to the TC-MPT, TC, MPT, or control group. The three intervention groups received TC-MPT, TC only, or MPT only three times per week for 3 months. Measurements were taken before and shortly after the intervention period. The primary outcomes were the LOS completion time and dynamic LOS scores, as measured using the BioSway™ system. The secondary outcomes included the Movement Assessment Battery for Children-Second Edition total test score and percentile rank, knee muscle peak force and time to peak force, and the number of falls in the past 3 and 12 months.

### Results:

None of the interventions affected the LOS completion time and dynamic LOS scores. Improve-ments in the peak forces of the knee extensors and flexors were found in the TC ( $p=0.006$ ) and MPT groups ( $p=0.032$ ), respectively. The number of fall incidents also decreased in these two groups ( $p<0.001$ ). No changes were found in other secondary outcomes.

### Conclusion:

Teachers may prescribe TC or MPT for children with DCD to increase their knee muscle strength and reduce their risk of falls. (Acknowledgement: General Research Fund 17112018, Research Grants Council of Hong Kong).

# ABSTRACT

## POSTER PRESENTATION 2

### Title:

Effects of Sport Game Outcomes on Acute Affective Response in Injured Veterans

### Author (presenting author underlined):

HWANG GY, Department of Health & Human Performance, Fort Lewis College, Durango, CO, USA  
PARK S, Research Institute of Sports & Industry Science, Hanseo University, Seosan, South Korea

### Background/Aim:

Sport competition has been used for injured veterans to enhance their positive affective feelings and to regulate their negative affective feelings. However, sport game outcomes (e.g., losing) may negatively influence acute affective responses in injured veterans. The purpose of this study was to investigate the effects of sport game outcomes on acute affect responses in injured veterans.

### Methods:

Twenty-three wheelchair basketball players (mean age,  $38.39 \pm 11.78$ ) participated in this study and were divided into two groups: winner ( $n=12$ ) and loser groups ( $n=11$ ). All participants completed the Physical Activity Affect Scale immediately before and after participation in the first game of a wheelchair basketball tournament. Mann-Whitney and Wilcoxon tests were used to test a significant difference in acute affective responses between groups (i.e., winners and losers) and within each group. Statistical significance was set at  $p \leq 0.05$ .

### Results:

No statistically significant difference was identified prior to the beginning of the first game (i.e., pre) for positive affect, negative affect, tranquility, and fatigue between two groups (i.e., game winners vs. losers). The losers experienced significantly higher negative affect and lower positive affect at the end of the first game relative to the winners.

### Conclusions:

The results of the present study indicated that the experience of losing may diminish the positive effect that sport participation can have. These results can inform how coaches and team players can emotionally support injured military personnel before, during, and after a sport competition.

# ABSTRACT

## POSTER PRESENTATION 3

### Title:

Development and Validation of a Curriculum-Related Physical Activity Recall Questionnaire

### Author (presenting author underlined):

LU YJ, Department of Sports Science, College of Education, Zhejiang University, China

### Background/Aim:

The study aims to develop and validate the Curriculum-related Physical Activity Recall questionnaire (CUPAR) as a measure of physical activity in adolescents.

### Methods:

83 middle-school students ( $13.23 \pm 0.74$  yrs) completed the CUPAR and wore ActiGraph accelerometers for seven consecutive days. Correlations and Bland-Altman plots were to examine the agreement between these two measures.

### Results:

Significant correlations were observed between the CUPAR and ActiGraph accelerometer for 5-day MPA ( $r=0.29$ ,  $p<0.01$ ), and for both 5-day and 7-day VPA ( $r=0.47$  and  $0.79$ ,  $p<0.01$ ), and MVPA ( $r=0.79$  and  $0.42$ ,  $p<0.01$ ), but not for others. Bland-Altman plots showed reasonable agreements between the CUPAR and ActiGraph estimates of VPA and MVPA. The agreement between CUPAR and ActiGraph was higher for in-school VPA ( $r=0.58$ ,  $p<0.01$ ) and MVPA ( $r=0.44$ ,  $p<0.01$ ) as compared to the out of school VPA ( $r=0.22$ ,  $p<0.05$ ) and MVPA ( $r=0.26$ ,  $p<0.05$ ).

### Conclusions:

The CUPAR can reduce respondents' burden, representing a reliable and efficient measure of physical activity among adolescents, especially for PA occurred during in-school sessions and at vigorous intensity.

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# ABSTRACT

## POSTER PRESENTATION 4

### Title:

Health-Promoting Lifestyles and Quality of Life for Parents of Children with Intellectual and Developmental Disabilities

### Author (presenting author underlined):

KIM SY, Department of Kinesiology and Sports Studies, Ewha Womans University, Korea  
JEOUNG B, Department of Exercise Rehabilitation, Gachon University, Korea

### Background/Aim:

The purpose of this study was to examine the relationship between a health-promoting lifestyle and quality of life among parents of children with intellectual and developmental disabilities (IDD).

### Methods:

A total of 254 parents (193 females, 61 males), of children with IDD were participated in this study. Participants were limited to the parents of children who were diagnosed with an intellectual disability, autism spectrum disorder, Down syndrome, or developmental delays. All participants completed a scale for examining quality of life (QL) (Noh, 1988) and the Korean version of the Health-Promoting Lifestyle Profile-II (HPLP-II) (Jeon, 2007). Pearson's correlation coefficient was conducted to examine the relationships between overall HPLP-II and the QL scores for parents of children with IDD. Multiple linear regression was also conducted to examine relationships among HPLP-II subfactors and overall QL score.

### Results:

Participants' education level and income were related to overall HPLP-II and QL scores. There were statistically significant relationships between health-promoting lifestyles and quality of life in parents of children with IDD ( $r=.562, p<.001$ ). The HPLP-II subfactors of spiritual growth, health responsibility, exercise, nutrition, interpersonal relations, and stress management could significantly predict overall score of quality of life in parents of children with IDD ( $R^2=.313, p<.001$ ).

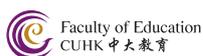
### Conclusions:

Healthcare providers should help parents of children with IDD to improve their quality of life by facilitating their health-promoting lifestyle behaviours. Further research is needed to develop effective intervention programs designed to increase health-promoting lifestyle behaviours among parents of children with IDD.

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# ABSTRACT

## POSTER PRESENTATION 5

### Title:

High Intensity Interval Training Using Whole-Body Exercises Decreases Pancreatic Fat Content and Improves Glycaemic Control of Type 2 Diabetes Patients

### Author (presenting author underlined):

CHEN F, College of Health Science, Wuhan Sports University, Wuhan, China

MEI W, College of Health Science, Wuhan Sports University, Wuhan, China

### Background/Aim:

To explore the effects of high intensity interval training for two months using whole-body exercises on pancreatic fat content and its impact on glycaemic control of type 2 diabetes patients.

### Methods:

24 patients with type 2 diabetes met the inclusion criteria and were randomised into 8-week-long high intensity interval training using whole-body exercises or control group in a 1:1 allocation ratio using random permuted blocks. The primary outcome was pancreatic fat, which was measured by magnetic resonance spectroscopy. Beta cell function was studied as the secondary outcome using variables derived from OGTT. Given the nature of the intervention, blinding was not applicable.

### Results:

All patients completed the study. Nearly half (48.70%) of patients were males. No significant differences were found between two groups on the average age, HbA1c, and pancreatic fat content before the trial. Compared to the control group, the HIIT group had significant decreased pancreatic fat content (from  $6.83 \pm 2.14\%$  to  $5.13 \pm 2.36\%$ , [mean, 95% CI],  $p < 0.01$ ), fasting blood glucose (from  $7.71 \pm 1.29$  mmol/L to  $6.12 \pm 0.75$  mmol/L, [mean, 95% CI],  $p < 0.01$ ), HbA1c (from  $7.46 \pm 1.17\%$  to  $6.46 \pm 0.72\%$ , [mean, 95% CI],  $p < 0.05$ ), and HOMA-IR (from  $2.22 \pm 1.03$  to  $1.39 \pm 0.55$ , [mean, 95% CI],  $p < 0.05$ ).

### Conclusions:

8 weeks of HIIT exercises reduces ectopic fat with in the pancreas, and improved glycaemic control in type 2 diabetic individuals. This trial shows that HIIT can be beneficial for type 2 diabetes remission.

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# ABSTRACT

## POSTER PRESENTATION 6

### Title:

A Journey to Being: A Family Phenomenological Study on the Water Leisure Sports Experience

### Author (presenting author underlined):

HWANG SH, Department of Physical Education, Korea National Sports University, Seoul, South Korea

ROH HK, Department of Adapted Physical Education, Korea National Sports University, Seoul, South Korea

OH HK, Department of Kinesiology, California State University, San Bernardino, USA

### Background/Aim:

The purpose of this study was to understand the essence of meaning through the characteristics of experiences of families with a child with a disability who participated in a water leisure sports family camp.

### Methods:

van Manen's (1997) hermeneutic phenomenology method was applied to understand experiences and four existentials (corporeality, relationality, spatiality, and temporality) were core concepts to analyse collected data. Participants were five families totaling 16 members with each family including a child with a disability. Participants' ages ranged from 8 to 54. Data were collected by observation, surveys, and in-depth interviews.

### Results:

The findings were analyzed by associating them with the four existentials (corporeality, relationality, spatiality, temporality) of their lifeworld proposed by van Manen and depicted the family's experience of the water sports summer camp: (corporeality) awakened, recognized; (relationality) visibility, horizontality; (spatiality) freedom, remembrance; (temporality) immersiveness, reflexivity. These findings represented that the family members experienced interconnected meanings within the overall time (past, present, and future) and clearly revealed the existence of a world during camp. Bodily communication is an existential understanding of all family members and were chances to notice children's unexpected growth. Lastly, assigning multiple instructors provided freedom and release for families from anxiety and responsibility because of disability.

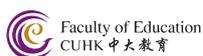
### Conclusions:

This study has significance in that it explored the pedagogical meaning of a sports program for the family of children with disabilities while attempting to explain the "original value of sports for the existence of human being".

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# ABSTRACT

## POSTER PRESENTATION 7

### Title:

The Effect of Dance Programs on Balance Ability in a Special Needs Class

### Author (presenting author underlined):

IKEDA C, Department of Special Needs Education, Hokkaido University of Education, Japan  
YASUI T, Department of Special Needs Education, Hokkaido University of Education, Japan  
KIKUCHI A, Sapporo Municipal Houmei Special Needs High School, Japan

### Background/Aim:

Jogging and weight training, which are generally practiced in special needs classes, elicit only a few different movement experiences. This study reports how a dance program (DP) in a junior high school special needs class affected physical function.

### Methods:

Eight students participated in the DP, which was a total of nine times over three weeks, within exercise classes (50 minutes). The DP was replaced by jogging after the students' daily weight and ladder training. The effect of the DP on physical function was examined by measuring balance ability. The task used to measure static balance ability was a two-legged standing task (TLS) using a center-of-gravity sway meter. The tasks used to measure dynamic balance ability were the Functional Reach Test (FRT) and the Jumping on Mats (JoM) from the M-ABC-2. Balance ability was measured two weeks before the first DP, immediately after the DP, and two weeks after the DP, and results were compared using the Friedman test.

### Results:

Comparing measurements before and immediately after DP, the total trajectory length of the TLS at eye opening was significantly shorter ( $p=0.02$ ) and the FRT significantly longer ( $p=0.04$ ), but neither showed any change two weeks after DP. JOM showed no significant change.

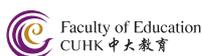
### Conclusions:

DP improved static and dynamic balance ability, and the effect lasted for two weeks. This result suggests that the movement experienced in the DP may have contributed to the improvement in balance ability.

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# ABSTRACT

## POSTER PRESENTATION 8

### Title:

Study on the Characteristics of Physical Activity Level of Primary School Students Aged 9–12 in the North of Jiangsu Province from the Perspective of Inter-Generational Transmission

### Author (presenting author underlined):

XUJ, School of physical education, China University of mining and technology

### Background/Aim:

How to improve the lack of physical activity of children and adolescents has become the top priority in China's physical education. The concept and behavior of parents can directly affect the level and degree of their children's participation in physical activities.

### Methods:

From the perspective of inter-generational transmission, this paper takes the physical activity characteristics of 600 primary school students aged 9–12 in the north of Jiangsu Province as the research object. 600 questionnaires were distributed to primary school students aged 9–12 and their parents, and 564 valid data were obtained. The descriptive analysis of the relationship between parents, the use of physical capital, the logistic test of the relationship between parents, the use of different grades, the logistic test of physical capital, and the analysis of the relationship between parents and their physical capital.

### Results:

The physical activity level of pupils from urban families is higher than that in rural areas; The physical activity level of primary school students whose parents have spouse families, high family economic capital, high family health capital, high level of sports cognition and high level of sports investment is higher; The level of physical activity of parents, their sports investment and sports cognition are significantly positively correlated with the level of physical activity of children, and have a significant impact on the inter-generational transmission relationship of physical activity level.

### Conclusions:

Parents should improve their sports awareness and increase their sports investment in their children, so as to lay the foundation for their lifelong sports.

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# ABSTRACT

## POSTER PRESENTATION 9

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**Title:**

A Pilot of Quantitative and Qualitative Evaluation Methods of Change of Direction in Amputee Soccer

**Author (presenting author underlined):**

MIYAMOTO A, Department of Physical Education, International Pacific University of Japan, Japan

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**Background/Aim:**

In amputee soccer matches, performance evaluation has so far been based on heart rate and distance travelled by GPS. However, those methods do not fully reflect the fast-paced movements of the players. Therefore, the purpose of this study was to examine of methods for quantitative and qualitative evaluation, focusing on the change of direction during a game.

**Methods:**

First, analysts examined video footage (30fps) of the game and decided on the criteria for the change of direction for the quantitative evaluation. The following were excluded from the analysis: when the player is holding the ball, out of play, or moved from a standstill. The number of changes of direction was determined as a quantitative evaluation. The qualitative evaluations were conducted for those judged as a change in direction: turn (right, left, forward/backward), number of steps, pattern of change in direction of movement (front to back, front to side, back to front, back to side, other), and ball possession (own team, opposition team). Two analysts conducted evaluations on two forward players from both teams during a 20-minute trial game and sought their level of agreement. Qualitative evaluations were limited to those that the two analysts considered to be changes of direction.

**Results:**

The inter-analyst agreement in the number of changes of direction was 71.8%. As for the qualitative evaluation, agreements of turn and ball possession were high, at more than 80% each. In contrast, the agreement of pattern of change in direction of travel (62.9%) and number of steps (47.8%) were low.

**Conclusions:**

The study found a need for criteria that accommodate successive changes in direction for clearer evaluation.

# ABSTRACT

## POSTER PRESENTATION 10

### Title:

Simple Strength-Training Exercise to Increase the Grip Strength in Cerebral Palsy Children

### Author (presenting author underlined):

EKAWATI FF, Faculty of Sports, Universitas Sebelas Maret, Surakarta, Indonesia

ISMARYATI, Faculty of Sports, Universitas Sebelas Maret, Surakarta, Indonesia

RAHAYU TW, Faculty of Sports, Universitas Sebelas Maret, Surakarta, Indonesia

PRASETYO HJ, Faculty of Sports, Universitas Sebelas Maret, Surakarta, Indonesia

### Background/Aim:

Children with Cerebral Palsy (CP) are those who have disorders in movement, attitude, body coordination and there are psychological and sensory disorders caused by disorders of brain development. Movement and coordination disorders include: muscles are too stiff or weak, muscle rigidity and excessive reflexes (spasms), muscle stiffness and normal reflexes (stiffness), delays in achieving motor skills, lack of muscle coordination (ataxia). This study aimed to determine the effect of Simple Strength-Training Exercise in improving hand muscle ability in children with spastic cerebral palsy.

### Methods:

This research used a single subject research (SSR) approach, with the A-B design model. The subjects of this study were three children with spastic cerebral palsy at YPAC Surakarta, Indonesia. The age of participant was 15, 14, and 27 years old. The participants were given six types of strength exercise every meeting for six weeks (three times a week). During exercise, all the participants accompanied and guided by their parents. Grip strengths were measured using a hand grip dynamometer before and after intervention. The data analysis used in this research was visual analysis under conditions.

### Results:

There was an increasing grip strength in the participants after intervention. The mean strength of right hand before intervention was 11.75kg, after intervention was 14.95kg. For the left hand, the mean before intervention was 9.4kg, after intervention was 14.12kg.

### Conclusions:

Simple Strength-Training Exercise is beneficial to improve upper extremity function in children with spastic cerebral palsy.

# ABSTRACT

## POSTER PRESENTATION 11

### Title:

Development and Implementation of Adapted Physical Activity Curriculum in China Special Education Schools

### Author (presenting author underlined):

SONG Y, College of Physical Education and Health, East China Normal University, Shanghai, China

DONG C, College of Physical Education and Health, East China Normal University, Shanghai, China

### Background/Aim:

Adapted physical activity (APA) originated from sports for persons with disabilities and covered physical education, recreation, dance, sports, and the adaptation and repairment of individuals injured during life. The promulgation of Sports and Health Care Curriculum Standards for Compulsory Education in Special Education Schools (SHCCS 2016 Edition) is of great guiding significance to the development of APA curriculum for students with intellectual disabilities. Three aims of this paper: 1. Develop APA curriculum which based on SHCCS 2016 Edition. 2. Stimulate the interest of students with intellectual disabilities in APA. 3. Promote the students' motor potential development, functional rehabilitation and compensation.

### Methods:

1. Questionnaires. To provide practical reference for APA curriculum development, a questionnaire was designed to investigate the current situation of Adapted Physical Education teaching in China Special Education Schools (CSES).
2. Interviews. It is expected to interview 30 adapted physical educators and experts in CSES to provide experience and guidance for APA curriculum development.
3. Action Research. Based on the SHCCS 2016 Edition, to design a suitable APA curriculum and verify the effectiveness of this curriculum.

### Results:

1. Building APA curriculum system: define curriculum theory, clarify curriculum objectives, refine curriculum contents, enrich teaching methods, design evaluation principles;
2. Cultivating students' interest in participating in sports, experiencing enjoyment and success of sports, and gradually forming a good habit of physical exercise;
3. Helping students to develop good psychological quality, cooperative ability and communication skills.

### Conclusions:

By APA curriculum teaching, leading students basically cultivate a healthy lifestyle and an optimistic attitude towards life, and lay a foundation for integration into the society.

# ABSTRACT

## POSTER PRESENTATION 12

### Title:

Psychometric Properties of the Chinese Version of Both Child-Report and Parent-Proxy Report PedsQL Among Children with Disabilities

### Author (presenting author underlined):

LI M, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

SIT CHP, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

LIANG X, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

YANG W, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

YU JJ, Department of Sport and Exercise Science, Zhejiang University, China

WONG SHS, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

SUM RKW, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Background/Aim:

Pediatric Quality of Life Inventory (PedsQL) is a measure to assess health-related quality of life (HRQoL) in children and adolescents. A reliable and valid PedsQL is critical to determine HRQoL among Chinese children with disabilities and to timely evaluate and initiate preventive interventions. The aim of this study was to present the main results of reliability and validity of the PedsQL among Hong Kong Chinese children with disabilities.

### Methods:

Participants of this study were from a larger sample of a fully-funded project which involved children from 24 special schools located in the Hong Kong Island, Kowloon, and New Territories of Hong Kong SAR, China. A total of 375 children with a physician diagnosis of PD, ID and HI, aged from 6–18 years old and their parents were derived and further analyzed to address the research questions. Among the sample, there were 252 boys and 123 girls, with a mean age of 12.93 (SD 3.99) years old.

### Results:

All the self-report and proxy-report scales exceeded the minimum reliability standard of 0.70 required for group comparisons, with School Functioning Scale for both child self-report ( $\alpha=0.79$ ) and parent proxy-report ( $\alpha=0.77$ ) acquired the lowest level of reliability, compared to other

domains. The MANOVA results showed that there are significant differences between children with PD, ID and HI in the domain of Physical Health (Functioning), School Functioning and total scores, with PD children reported the least quality of life among three groups. For concurrent validity, there was a good and positive correlation between children self-report and parent proxy-report, which was statistically significant ( $r=0.72$ ,  $n=375$ ,  $p<0.0001$ ). In terms of criterion validity, the correlation coefficients of the Emotional Functioning just reached 0.50 ( $p<0.001$ ), which is at the threshold for representing a large or strong correlation, while in the Social Functioning domain, children with HI were just above borderline ( $r=0.51$ ,  $p<0.001$ ).

### Conclusion:

The Chinese version of the PedsQL demonstrated acceptable psychometric properties for future research and preventive interventions, as well as clinical practice for both children self-report and parent proxy-report among children with different disabilities, including PD, ID and HI in Hong Kong.

# ABSTRACT

## POSTER PRESENTATION 13

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**Title:**

A Model-Based Approach to Teaching Adapted Physical Education

**Author (presenting author underlined):**

LEE H, Department of Adapted Physical Education, Yong In University, South Korea

LEE J, Department of Adapted Physical Education, Yong In University, South Korea

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**Background/Aim:**

A number of successful contemporary physical education programs employ model based instruction as their foundational framework (Metzler, 2011). Among those, Sport Education model with its goals of producing competent, literate and enthusiastic students is becoming widely accepted (Siedentop et al., 2004). There is a lack of research on teacher's perspectives of using the Sport Education model with students with disabilities. Therefore, the purpose of this study was to examine the perceptions of a physical education teacher about teaching students with disabilities using the Sport Education model.

**Methods:**

The participant in the study was a 34 year old physical education teacher with seven years of teaching experience. The study took place at the self-contained secondary school that serves students with severe and profound cognitive and physical disabilities in the southeastern United States. A teacher conducted two 16 lesson swimming Sport Education seasons with grades 6 and 7 during adapted physical education. Data were collected using video records of all lessons, field notes, lesson plans, and two formal and 16 informal interviews. A thematic analysis was used when examining the data to identify common themes (Denzin & Lincoln, 2003).

**Results & Conclusion:**

The following themes were identified: change of teaching style, increased planning, increased student enthusiasm and social interaction, and challenges in team affiliation. Finding of the study supported some of the previous research on Sport Education (Kinchin, 2006) and also underscored the unique challenges for the teacher when using Sport Education with students with disabilities.

## ABSTRACT

### POSTER PRESENTATION 14

#### Title:

Physical Activity Program for Overcoming Hyperactive Behavior of Autism Spectrum Disorder in Inclusive School Indonesia

#### Author (presenting author underlined):

YUWONO J, Special Education Program, Sebelas Maret University, Indonesia  
SUPRATIWI M, Special Education Program, Sebelas Maret University, Indonesia  
ANWAR M, Special Education Program, Sebelas Maret University, Indonesia  
ROMADLON AJ, Special Education Program, State University of Malang, Indonesia  
SUMARTININGSIH S, Departement of Sport Science, State University of Semarang, Indoensia

#### Background/Aim:

One of the problems of children with autism spectrum disorder is the behavior of autistic children who are very active (hyperactivity). Hyperactive autistic children cannot sit still, walk around in class, do not concentrate on learning activities, and seem to interfere with learning activities in inclusive classes. The purpose of this study was to determine the program, type and implementation of physical activities carried out by teachers to overcome the problem of hyperactive behavior in inclusive schools.

#### Methods:

The research uses qualitative methods. The informants in this study were 10 teachers in inclusive schools, namely 5 inclusive schools from rural areas and 5 inclusive schools from urban areas, Central Java, Indonesia. Data collection techniques using questionnaires and group discussion forums. The analysis in this study uses the Miles and Huberman model.

#### Results:

The results of the study show that 1) Teachers make individual programs that are integrated with the school curriculum for autistic children who have hyperactive behavior. For autistic children with severe behavioral problems, a special program is made. 2) The implementation of physical activities is carried out in class and individual settings and is carried out in an indoor out door setting. 3) types of physical activity for autistic children who have hyperactive behavior, namely throwing and catching balls, movements and songs, trampolines, and playing throwing balls into the basket. The goal is to channel hyperactive behavior/ineffective energy into effective behavior.

#### Conclusion:

To help hyperactive autistic children in inclusive schools, programs are needed and create appropriate types of physical activities for autistic children so that the hyperactive behavior of autistic children becomes effective behavior.

# ABSTRACT

## POSTER PRESENTATION 15

### Title:

Associations Between Physical Activity, Sleep, and Executive Function in Children with ADHD: A Pilot Study

### Author (presenting author underlined):

SUN FH, Department of Health and Physical Education, The Education University of Hong Kong, Hong Kong SAR, China  
HO KYF, Department of Health and Physical Education, The Education University of Hong Kong, Hong Kong SAR, China  
ZHANG TJ, Department of Health and Physical Education, The Education University of Hong Kong, Hong Kong SAR, China

### Background/Aim:

Attention-deficit/hyperactivity disorder (ADHD) is a common developmental problem among children. The deficits in executive function, poor sleep quality, and low levels of physical activity are frequently observed in this population. The current study aimed to explore the potential correlations between physical activity, sleep, and executive function among children with ADHD.

### Methods:

Nineteen children with ADHD (Age:  $9.5 \pm 3.5$  yrs.; Weight:  $37.5 \pm 15.5$  kg) participated in the study. Accelerometers (ActiGraph, Shalimar, USA) were used to measure children's physical activity and sleep-related parameters. The Wisconsin Card Sorting Test (WCST) was used to assess the executive function of the participants. Pearson correlation analysis was used to analyze the relationship between these parameters.

### Results:

The WCST (Sum-perseverative Error) was found to be positively correlated with total sedentary bouts ( $r=0.518$ ,  $p<0.05$ ). Additionally, the WCST (Total Error) was negatively correlated with the Average Length of Awakenings in Minutes ( $r=-0.619$ ,  $p<0.05$ ) and the Average Movement Index ( $r=-0.554$ ,  $p<0.05$ ) in sleep. However, physical activity level seems to have no correlation with different sleep parameters in the present study.

### Conclusion:

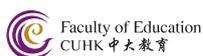
Findings of the current study revealed that both physical activity and sleep may be closely related to the executive function (cognitive flexibility) of children with ADHD. Further large-scale studies are needed to confirm the findings and explore the potential mechanisms behind the relationships.

This study was substantially supported by a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (Project No. EdUHK 18603120).

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# ABSTRACT

## POSTER PRESENTATION 16

### Title:

Effect of 8-Week Adapted Yoga Exercise on Balance in Postmenopausal Women

### Author (presenting author underlined):

CHAN KW, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong, Hong Kong

LO SY, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong, Hong Kong

LEUNG CNG, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong, Hong Kong

### Background/Aim:

To examine the effect of 8-week Hatha yoga intervention on balance performance among middle-aged postmenopausal women in Hong Kong.

### Methods:

Twenty-three postmenopausal Chinese women aged 50 to 60 were divided into two groups - yoga group (n=11) and control group (n=12). Balance assessments (closed-eye single-leg stand) were administered within 1 week before and after Hatha yoga programme. No significant difference ( $p > .05$ ) was found in physical activity level and balance performance between groups at the baseline. Experimental group was required to attend a 2-hour Hatha yoga class weekly. It was a tailor-made activity session involving physical postures, breathing, and stretching exercise.

### Results:

Compared to control group, yoga group achieved a significant improvement in balance performance ( $F=4.81$ ,  $p=.040$ ).

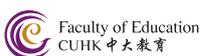
### Conclusion:

Hatha yoga exercise generated a profound effect on fall prevention among postmenopausal women.

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# ABSTRACT

## POSTER PRESENTATION 17

### Title:

Mind-Body Interventions for Health Outcomes in Individuals with Autism Spectrum Disorder: A Systematic Review

### Author (presenting author underlined):

HUANG JF, School of Physical Education and Sports Science, South China Normal University, Guangzhou, China

WANG JH, School of Physical Education and Sports Science, South China Normal University, Guangzhou, China

ZHONG MT, School of Physical Education and Sports Science, South China Normal University, Guangzhou, China

### Background/Aim:

Mind-body interventions (MBI) are rising popularity among individuals with autism spectrum disorder (ASD). However, evidence for their effectiveness in addressing health outcomes for individual with ASD is limited. The purpose of this systematic review is to examine and synthesize the existing scientific evidence regarding the efficacy of MBI on individuals with ASD.

### Methods:

PubMed, Cochrane Library, EMBASE, Web of Science, SPORTDiscus, and Scopus databases were systematically searched for relevant peer-reviewed articles from inception until January 2022. Randomized controlled trials examining MBI in individuals with ASD were included. Two researchers independently evaluated the methodological quality of all included studies using PEDro scale.

### Results:

Fifteen studies including 568 participants were included for final analysis. The majority of the studies included participants of children, primarily male (n=435, 76.6%). MBI studied the effectiveness of mindfulness-based therapy (n=5), Qigong massage (n=3), yoga (n=3), Tai Chi (n=2) and Neigong (n=2). Mindfulness-based therapy and yoga were the most frequently proposed interventions. Dosage varied in frequency and duration. Studies demonstrated that MBI can result in improvements to numerous health outcomes including mental health, memory function, self-control, depression, anxiety, motor performance, executive function, sociability, sensory, and autistic behavior.

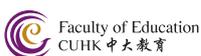
### Conclusion:

Despite the abundance of evidence of the MBI is feasible and shows potential for improving health outcomes in individuals with ASD. More rigorous studies on MBI such as Tai Chi and Qigong is still needed to provide more robust evidence for evidence-based practice.

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# ABSTRACT

## POSTER PRESENTATION 18

### Title:

Effort in Promoting the Inclusion Program in School Physical Education and Physical Activity in Indonesia: Professional Development for the Inclusive PE Teacher

### Author (presenting author underlined):

MAHENDRA A, Department of Primary School of Physical Education Teacher Education, Universitas Pendidikan Indonesia, Indonesia

### Background/Aim:

Inclusive Physical Education in Inclusion Schools in Indonesia has been running for almost two decades and to date still facing basic and sound problems in terms of its implementation mostly due to the unpreparedness of the PE teachers. For that purpose, the majority of Inclusive PE teachers need to be helped in order for them to be able to deliver a quality needed PE program, through such a professional development program provided by the experts both from the field of physical education and special education.

### Methods:

The program involved 20 Inclusive PE teachers and 5 experts from both physical education and special education fields, in form of "in" and "on" training program. The development program supported by the government, through a thoroughly planned program in every aspect of content knowledge and pedagogical content knowledge. Progress and results were monitored mainly by means of a checklist of behaviour modification instruments from the early start of the program all the way down to the end process of the program, elaborating technique of lesson study format.

### Results:

It was surprising that the efforts have made a great leap in terms of teachers' competencies in teaching and giving the quality program for the students with disabilities, including giving a significant acceptance from the students with no disabilities and all the helpers involved in the program.

### Conclusion:

It was strongly believed that the professional development program initiated in conjunction with the very well-planned "lesson study program" has contributed a great deal of results which significantly amplify the necessity of shifting attention to the teachers' competencies for the sake of children's benefits.

# ABSTRACT

## POSTER PRESENTATION 19

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**Title:**

Effects of Teacher Socialization on Choosing Adapted Physical Education as a Career

**Author (presenting author underlined):**

LEE H, Department of Adapted Physical Education, Yong In University, South Korea

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**Background/Aim:**

Lawson (1988) describes teacher socialization as "all kinds of socialization that initially influence persons to enter the field of physical education and are responsible for their perspectives and practices as teacher educators and teachers" (p.107). There has been little research on choosing Adapted Physical Education (APE) as a career which has been informed and guided by teacher socialization theory. Therefore, the purpose of this study was to identify the impact of teacher socialization on a career choice.

**Methods:**

The participants were one APE teacher and three preservice APE teachers (2 female, 2 males; age range 24–26). Data were collected from semi-structured in-depth interviews and documents related to choosing APE as a career. Data were analyzed using analytic induction and constant comparison (Patton, 2002). Trustworthiness of data was established through peer debriefing, triangulation, and member checks.

**Results:**

The following four key themes were emerged: active participation in physical activity and sports, positive experiences with the physical education teacher, the impact of family member's active participation in sports, and the influence of family members with disabilities and volunteer activities.

**Conclusion:**

The results of the study give detailed picture about choosing APE as their careers. In addition, this study provides information about socialization factors, sport participation and significant others, that shape the participants' perceptions about teaching as their careers. Understanding the significance of these experiences may serve to guide teacher educators to improve the effectiveness of APE programs.

# ABSTRACT

## POSTER PRESENTATION 20

### Title:

The "Fascinatingness" of the Adapted Sport and the Uniqueness of the Sport Space: A Case Study of the Blind Marathon

### Author (presenting author underlined):

UETA S, School of International Cultural Relations Department of Community Development, Tokai University, Hokkaido, Japan

YAMASAKI T, Faculty of Education, Hokkaido University, Hokkaido, Japan

### Background/Aim:

Adapted sports have been advocated in Japan, and the "fun" of each discipline has been questioned both academically and practically, based on considerations and innovations for various disabilities. However, despite these efforts, the reality is that most of the reasons for people with disabilities to engage in adapted sports in Japan are functional and instrumental, such as health maintenance and improvement, mood change, and stress relief, and the "fascinatingness" of the sport itself is not fully understood by the people with disabilities. Therefore, the aim of this study was to elucidate what kind of 'fascinatingness' is inherent in sports for disabled people.

### Methods:

Through examination of previous studies, it has become clear that the "fascinatingness" of sports for the disabled is created by the variability and indeterminacy inherent in sports, and this study exemplifies this by focusing on a blind marathon as a case study.

Specifically, we focused on the fact that in the blind marathon, the location and course (i.e. sports space) where the competition takes place changes from event to event and from practice to practice. In order to clarify how blind runners, perceive this changing space and what they find interesting about it, we conducted interviews with runners and participant observation of the activities of a blind marathon club.

### Results and Conclusions:

The results revealed that for visually impaired runners, the running space is composed of information received through the senses of touch, hearing, and smell. It became clear that this spatial awareness gained through senses other than sight was a central component of the "fascinatingness" of the blind marathon.

## ABSTRACT

### POSTER PRESENTATION 21

**Title:**

Moderate-to-Vigorous Physical Activity and Fundamental Movement Skills Proficiency in Children with and without ADHD: Associations with Sleep Quality

**Author (presenting author underlined):**

LIANG X, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
SIT CHP, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong.  
QIU H, Department of Educational Administration and Policy, The Chinese University of Hong Kong, Hong Kong.  
LI MH, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

**Background/Aim:**

The purpose of this study was to (1) examine differences in moderate-to-vigorous physical activity (MVPA), fundamental movement skills (FMS) proficiency, and sleep quality in children with and without attention-deficit hyperactivity disorder (ADHD), and (2) determine the association of MVPA with FMS proficiency while considering key confounding factors.

**Methods:**

Participants included 88 children with ADHD aged 6–12 years old (Mage=8.43, SD=1.38, 81.8% boys) and 40 age-matched typically developing (TD) children (Mage=8.46, SD=1.44, 60% boys). MVPA was recorded by a wGT3X-BT accelerometer for seven consecutive days. FMS proficiency was assessed using the Test of Gross Motor Development – third edition. Sleep quality was assessed using a self-report questionnaire. Multivariate regression was used to determine whether between-group differences existed in MVPA, FMS proficiency and sleep quality after controlling for age, sex and BMI. Pearson correlations and hierarchical multiple regression models were used to examine the relationship between MVPA and FMS proficiency.

**Results:**

Children with ADHD spent significantly less time in MVPA daily, displayed less proficiency in locomotor and ball skills and reported more sleep problems (e.g., longer sleep latency, less total sleep time and lower sleep efficiency) when compared to children with TD. MVPA and total sleep time were significantly associated with locomotor skills. Total sleep time ( $\beta=0.014$ , 95% CI [0.000, 0.029]) was a significant predictor of proficiency in locomotor skills.

**Conclusions:**

Future FMS interventions should target children with ADHD and should emphasize improving locomotor skills proficiency and sleep quality.

# ABSTRACT

## POSTER PRESENTATION 22

### Title:

Identifying of Physical Activity, Gross Motor Coordination and Balance in Down Syndrome

### Author (presenting author underlined):

SUMARTININGSIH S, Department of Sports Science, Universitas Negeri Semarang, Indonesia

ERLANI L, Department of Special Education, Universitas Negeri Jakarta, Indonesia

YUWONO J, Department of Special Education, Universitas Sebelas Maret, Solo, Indonesia

### Background/Aim:

The down syndrome has various physical problems. There are: hypotonia, loose joints and ligaments, hand function, slow in reaction time and motor performance, impaired coordination and balance. The purpose of this study was to identify and examine the physical activity, gross motor coordination and balance of children with Down syndrome.

### Methods:

A survey test approach and accelerometry were used to measure the spent time of physical activity. Gross motor coordination test and balance test were used to measure coordination and balance. Five-teen down syndrome from ages 20–25 years, 6 males, and 9 females were participant in this study.

### Results:

There were 40% male and 60% female with down syndrome participated in this study. 80% of down syndrome do light physical activity (Physical activity martial art and aerobic dance, two days for a week 60 minute each session). The hand dominance, for the right hand is 80% and left hand 20%. Hand and leg formation 55% were good 60% of down syndrome is good in passive balance (right leg).

### Conclusions:

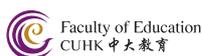
The study conclude that the physical activity was moderate for down syndrome for 120 minutes a week, the right hand and the right leg was dominance and need improve gross motor coordination.

**Keywords:** Intellectual disability, Exercise, adaptability

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# ABSTRACT

## POSTER PRESENTATION 23

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**Title:**

Building a Cross-Curricular Teaching Model for Paralympic Education – Focusing on the Relationship Between Health and Physical Education and Moral Studies in Japan

**Author (presenting author underlined):**

HIROTAKE T, Hiroshima University Mihara Junior High School, Mihara, Japan

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**Background/Aim:**

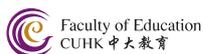
In Japan, Paralympic education has become an eventful activity with guest lecturers. However, this is not a sustainable practice of Paralympic education. In particular, as the host country of the 2020 Tokyo Games, Japan will need to continue its efforts even after the Games are over. In this case, a cross-curricular style of learning with other subjects, rather than learning only in health and physical education, will be necessary. Therefore, the purpose of this study is to construct a cross-curricular teaching model for sustainable Paralympic education in the future by examining the educational effects of the relationship between health and physical education and moral education.

**Methods:**

Construct a unit plan that enhances the connection between health and physical education and moral education. In particular, the health and physical education curriculum in Japan consists of three components: health, physical education skills, and physical education theory. Since there is a need to enhance the relationship between physical education theory and practical skills in particular, the curriculum was implemented in the sandwich style of physical education theory-practical skills-physical education theory. Furthermore, in order to enhance the emotional learning, the moral education was placed at the end of the unit.

In order to verify the effectiveness of the lessons, we decided to conduct a qualitative analysis of the students' impressions in order to clarify what they learned. The qualitative analysis software "NVivo" (ver. 1.5.1, QSR international) was used to analyze the contents of the free-response statements.

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# ABSTRACT

## POSTER PRESENTATION 23

### Results:

The most interesting thing in the students' opinion at the end of the study in the field of physical education theory was their interest in sports (26.8%). After completing the practical training in physical education, the students' awareness of life (27.5%) also increased. It can be inferred that the change in the students' awareness before and after the practical training in physical education was largely due to the experience of the practical training. In terms of their actual impressions of the class, some students commented that they were able to empathize with and deepen their understanding of the feelings of the para-athletes through the hands-on experience. After the moral education class, the students had a class to think about compassion, and by doing so, based on their previous learning, there were many results in which they embodied their ideas. For example, in school life, they would call out to others when they saw someone in need. On the other hand, some students had a negative view of compassion.

### Conclusions:

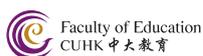
In this study, it can be seen that learning in the physical education skills led to not only a partial understanding, but also to an understanding with a real feeling, as in the case of "by playing goal ball, I can think a little about the feelings of people with disabilities. Furthermore, it can be inferred that the study of moral education was effective in deepening this result.

In particular, we focused on the fact that the students were negative about the feeling of compassion in their opinions after the moral education class, which was not a denial of the act of compassion, but rather an appeal to the necessity of having such feelings as a matter of course. We believe that the expression of such opinions leads to the development of qualities and abilities as a person who forms society beyond the school system and the subject system. Furthermore, in terms of the issues raised by the students, we believe that this is also an outcome of the reverse education brought about by Paralympic education. In the future, we would like to verify the effects of continuing such efforts.

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# ABSTRACT

## POSTER PRESENTATION 24

### Title:

Effects of School-Based Intervention on Motor Performance, Physical Activity, and Mental Health Among Children with Developmental Coordination Disorder: A Randomized Controlled Trial

### Author (presenting author underlined):

SIT CHP, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
LI M, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong  
YU JJ, Department of Sport and Exercise Science, Zhejiang University, China  
HO TH, Rainbow, Centre for Behavioural health, The University of Hong Kong  
TSAI CL, Institute of Physical Education, Health & Leisure Studies, National Cheng Kung University  
ARBOUR-NICITOPOULOS K, Faculty of Kinesiology & Physical Education, University of Toronto

### Background/Aim:

Mental health is a multidimensional state of well-being, consisting of negative constructs such as depression and anxiety and positive constructs such as self-concept. The objective of the study was to examine the motor performance, physical activity (PA), and mental health among children with developmental coordination disorder (DCD) and typical development (TD).

### Methods:

A total of 203 primary children aged 6 to 10 years were randomly allocated to either a PA group (DCD-PA n=51, TD-PA n=68) or control group (DCD-C n=52, TD-C n=33). The PA group received 30-min exercise session conducted three times a week for 12-week during school time, whereas the control group received conventional physical education lessons. Outcome variables, including motor performance (MABC-2), objectively-measured moderate-to-vigorous PA (MVPA), self-perceived stress, depression, and anxiety; and biomarker of stress (salivary cortisol), were measured at baseline and immediate post-test.

### Results:

Results of the ANCOVA showed that there was significant interaction effect on motor performance ( $F(1, 96)=11.84$ ,  $p<0.001$ ,  $\eta^2=0.11$ ) and MVPA ( $F(1, 96)=7.00$ ,  $p<0.01$ ,  $\eta^2=0.07$ ) after the intervention period, but no significance for self-perceived stress, depression, and anxiety; and salivary cortisol (all  $p>0.05$ ). Significant time effects were observed in motor performance for both groups, with the PA group showing more improvement at the immediate post-test. The PA group also showed improved self-perceived stress, depression, and anxiety than the control group.

### Conclusions:

The study suggests that a school-based intervention was effective for promoting motor performance as a primary outcome, and active behaviour (MVPA) and attributes of mental health as secondary outcomes in children with DCD. This type of intervention provides a promising avenue to promote physical and mental health for children with DCD in the school setting. Future studies are needed to explore the longitudinal and sustained effects of PA intervention in the long run.

This study was funded by the RGC General Research Fund (#14622018).

# ABSTRACT

## POSTER PRESENTATION 25

### Title:

A Meta-Analysis of Effectiveness on Interventions to Improve Balance, Gait, and Upper Extremity Function in Persons with Stroke

### Author (presenting author underlined):

LEE J, Department of Special Physical Education, Yongin University, Yongin, Republic of Korea

LEE Y, Seoul Nat'l University

HAN B, Seoul Nat'l University

YANG H, Seoul Nat'l University

KIM S, University of Seoul

CHOI S, University of Seoul

### Background/Aim:

The purpose of this study was to determine the effectiveness of interventions for improving balance, gait, and upper extremity function in persons with stroke.

### Methods:

The National Assembly Library, Research Information Sharing Service (RISS), Korea Research Information Service (KISS), and Academic Paper Knowledge Service (Dbpia) were searched from 2016 through October 2021, 48 randomized controlled trials studies were selected for the final inclusion to the study. Each implemented intervention for persons with stroke and reported that balance, gait, and upper extremity function were chosen as outcome measures and complied with methodological standards according to 11 evaluation items of AMSTAR (Assessment of Multiple Systematic Review). For analysis, meta-analysis programs CMA ver.3 and SPSS 23.0 were used and total of 646 subjects (389 males, 257 females) were studied, and excluding unreported data, 122 hemorrhages and 200 patients with infarction were analyzed. The effects of intervention type, time, duration, frequency per week, and dependent variables were analyzed.

### Results:

As a result, among the intervention program, walking backward (0.915) was the most effective, followed by compound exercise (0.821). And the intervention time was found to be most effective when it was performed for 60 minutes (1.241), twice a week (0.888), and for 12 weeks (0.952). And the age range was 71–75 years old (1.010), and the onset period was found to be effective in 51–60 months (1.155) and less than 10 months (1.016). By dependent variable, in balance, the backward walking intervention (1.071) showed the greatest effect, followed by the PNF pattern exercise (0.639). In walking ability, PNF pattern exercise (0.905) was the most effective, followed by balance exercise (0.781). Lastly, for upper extremity function, virtual reality intervention (0.637) was the most effective, followed by mirror therapy (0.558).

### Conclusions:

Therefore, findings of the present study suggest considering different intervention strategies to improve the balance, gait, and upper extremity function in persons with stroke.



# ABSTRACT

## POSTER PRESENTATION 26

### Title:

Development of Augmentative and Alternative Communication (AAC) Systems in Learning Adapted Physical Education for Autistic Children

### Author (presenting author underlined):

ERLANI L, Department of Special Education, Faculty of Education, Jakarta State University, Indonesia

SUMARTININGSIH S, Department of Sports Science, Semarang State University, Indonesia

BACHTIAR IG, Department of Special Education, Faculty of Education, Jakarta State University, Indonesia

### Background/Aim:

Adapted Physical Education service program for children with autistic in its implementation, there are still many difficulties in communication between teachers and students. This research aims to find an Augmentative and alternative communication system in learning Adapted Physical Education for autistic children.

### Methods:

Mixed Method Research as a descriptive qualitative approach to explore data in developing AAC systems and Single Subject Research to analyze changes in subject abilities.

### Results:

- 1, Development of Augmentative and Alternative Communication Systems in developing Adapted Physical education learning abilities of autistic children is the development of AAC-based assessment cards that are grouped based on material
- 2, Analysis of the development impact has a real impact on the development of adapted physical education learning abilities for autistic children as indicated by changes in communication behavior

### Conclusions:

In conclusion, AAC system in adapted physical education learning shows visible accomplishment. Besides, AAC system has been proven to have a strong impact on communication skills to help students' communication function which is the ability of skills in learning adapted physical education and communication will increase in the end.

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# ABSTRACT

## POSTER PRESENTATION 27

### Title:

Exploring On-Site Responses to Non-Face-to-Face Classes by the Sports Association for the Differently Abled and Proposing Policies According to COVID-19

### Author (presenting author underlined):

KIM KH, Department of Physical Education, Seoul National University/Doctoral Student, Seoul, Korea

### Background/Aim:

The purpose of this study is to explore on-site responses to non-face-to-face classes by the Sports Association for the Differently abled in a special situation called COVID-19 and to understand what policy measures are to continue non-face-to-face classes.

### Methods:

The A Sports Association for the Differently abled was selected as the subject of the study. Research participants were used as purposive sampling, which is mainly used in qualitative research, in consideration of the researcher's accessibility and data collection possibility. Therefore, four program leaders from A were selected as research participants. The data collection was conducted through face-to-face in-depth interviews. In addition, a semi-structured questionnaire was prepared to derive the research results, and inductive category analysis was used.

### Results:

The results of the study are as follows. Firstly, program leaders belonging to A shared continuous communication and feedback among leaders and prepared as a willingness for non-face-to-face classes through a confusing process. Moreover, accessibility was expanded, reducing inconvenience, and satisfaction with the class was also high. Secondly, most of the exercises were basic exercise-oriented physical activities, and it was found that there was a limit to proceed with group sports. Thirdly, as a policy proposal to continue non-face-to-face classes, it was confirmed that the improvement of teaching equipment, accumulation of experience, improvement of competency through leader education, and recruitment of additional program leaders were required.

### Conclusions:

Firstly, the research related to non-face-to-face sports classes for the differently abled in the COVID-19 situation should be further conducted, including studies approached in a policy and institutional way. Secondly, it may be pointed out that the number of study participants in this study was not sufficient. In this study, a research analysis was conducted on one group, but in a follow-up study, it is hoped that more abundant data on non-face-to-face classes by the Sports Association for the Differently abled will be accumulated through comparison of the other two groups.

# ABSTRACT

## POSTER PRESENTATION 28

### Title:

The Actual Sports Activities of People with Disabilities Based on the Questionnaire Survey on Lifelong Learning

### Author (presenting author underlined):

KONDO N, Department of Social Management, Health Sciences University of Hokkaido, Sapporo, Japan

### Background/Aim:

To better understand what kind of lifelong learning opportunities are sought by people with disabilities (mostly those with intellectual disabilities), and what is the current state of sports activities among them.

### Methods:

- 1, A questionnaire survey was conducted with people with disabilities. We asked offices providing welfare services for people with disabilities and obtained responses from those who use such services.
- 2, A questionnaire survey of 100 business establishments that provide welfare services for people with disabilities was conducted.

### Results:

- 1, A total of 57 people with disabilities responded to the survey. Seventeen respondents said that they were engaged in lifelong learning activities, including sports. "Leisure/recreation" was the most common activity with seven respondents, followed by "sports activities" with four respondents. The reasons given by those who did not engage in any activities were "lack of opportunities," "lack of information," and "lack of financial."
- 2, A total of 55 establishments responded to the survey. More than half of the respondents claimed that they were "unknown" of their users' involvement in lifelong learning activities, including sports. As for the reasons for not engaging in lifelong learning activities, many of them considered "no opportunity," "lack of information," and "didn't feel the need for it".

### Conclusions:

It was discovered that a few respondents were engaged in lifelong learning activities including sports. It is suggested that the activities sought by the respondents and their supporters may not be adequately provided, and it is necessary to address this issue.

# ABSTRACT

## POSTER PRESENTATION 29

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**Title:**

The Relationship of Sense of Agency (SoA) in Children with Developmental Coordination Disorder – Creating a Gross Motor Function Measuring Tool in Physical Activity

**Author (presenting author underlined):**

JUNG HW, Department of Physical Education, Health and Sport Sciences, University of Tsukuba, Tsukuba, Japan

SAWAE Y, Department of Physical Education, Health and Sport Sciences, University of Tsukuba, Tsukuba, Japan

HANAMURA H, Department of Physical Education, Health and Sport Sciences, University of Tsukuba, Tsukuba, Japan

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Children with developmental coordination disorder (DCD) are physically inept, struggling with difficulties in coordination during their daily lives, which is complicated. The study aims to gain evidence that the sense of agency (SoA) is related to subjective changes in internal motivation which impact the coordination mechanisms in gross motor. The measurement tool of SoA measured fine-motor as individual movements using fingers or continuous movements so far. There are no studies on a measuring tools related to coordination, which is the main characteristic of children with DCD; Gross Motor's SoA. By developing a gross motor function measuring tool (Jung Method) that can measure SoA, confirm the validity of SoA measuring tool and fine-motor function measuring tool (KEIO Method) currently used in DCD research and other studies; the study aims to investigate whether it can be used as a gross motor measuring tool for children with DCD. To investigate the correlation between the SoA Keio method and Jung method on 9 young adults, Pearson correlation analysis was performed to analyze the correlation between the two variables. The correlation between the Keio method, SoA measuring tool, and the Jung method showed a positive (+) correlation with  $R=0.865$ . The Jung method developed in this study is an SoA measuring tool and is thought to be a useful measuring tool to analyze effects of SoA deficiency and fine-motor performance of children with DCD characteristics (children with physical ineptness), suggesting the possibility of use in other studies.

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# ABSTRACT

## POSTER PRESENTATION 30

### Title:

Social Power of Coaches as Perceived by Japanese Female Wheelchair Basketball Players: Factors that Define Satisfaction with Coaches

### Author (presenting author underlined):

KANAYAMA C, College of Social Sciences, Ritsumeikan University, Japan

IWAMOTO M, Hirakata School for Special Needs Education, Japan

### Purpose:

The purpose of this study was to determine, using French & Raven's (1959) theory of "social power," the relationship between the social power of coaches as perceived by female wheelchair basketball players and their satisfaction with their coach.

### Methods:

A questionnaire survey was administered to 78 players in the Japan Women's Wheelchair Basketball Championships held in January 2020. Fifty-six responses were received (response rate: 71.2%). The survey consisted of three concepts: (1) "professional leadership skills," (2) "communication skills," and (3) "ability to support daily life"; each of which had three to four social power dimensions (5-point Likert scale). A principal component analysis was conducted for each of the 10 social power dimensions. The first principal component scores were used to compare the results by attribute. Multiple regression analysis was performed with satisfaction with the current coach as the dependent variable.

### Results & Conclusions:

- 1, "Professional teaching ability" was highly valued by players with no previous basketball experience prior to their injury.
- 2, "Communication skills" was highly valued by players under 40 years old.
- 3, "Ability to support daily life" was rated highly by players who had been playing wheelchair basketball for less than 10 years ( $P < 0.05$  for all). Coaches with disabilities had more influence on players than coaches without disabilities ( $P < 0.001$ ). However, "Reward power" ( $\beta = 0.494$ ,  $P < 0.001$ ) and "Referent power" ( $\beta = 0.383$ ,  $P < 0.001$ ) influenced satisfaction with the coach, regardless of whether or not the coach had a disability. Athletes' sense of satisfaction with their coaches was formed based on the coaches' expertise in the sport.

# ABSTRACT

## POSTER PRESENTATION 31

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**Title:**

Revision and Validation of Chinese Version of The Youth Experience Survey

**Author (presenting author underlined):**

ZHANG TT, Nanning Normal University, Nanning 530000, China

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**Background/Aim:**

The Youth Experience Survey (YES) was developed as a self-report instrument to inventory students' developmental experiences in an organized youth activity, such as an extracurricular activity or community-based program. The YES has been used to assess those same experiences in other settings of youth's daily lives. Therefore, the purpose of this study is to examine the reliability and validity of the youth experience survey in China, which is conducive to its application in various fields of youth activities in the future, and to provide an effective measurement tool for the positive development of youth in all aspects.

**Methods:**

1,400 freshmen and sophomores of Wuhan Sports University who participated in structural activities were used as the research objects to test the reliability and validity of the youth experience survey. After screening, there were 1289 effective subjects, including 871 boys (67.5%) and 418 girls (32.5%). The average age of participants was 18.6 years old. At the same time, the life satisfaction rating scales, self-rating anxiety scale and Center for Epidemiologic Studies Depression Scale were used as the criterion.

**Results:**

The result of exploratory factor analysis and the related between each subscale showed that the questionnaire has good structure validity; The survey was of good criterion validity as well; the overall weight table of internal consistency reliability in 0.959.

**Conclusions:**

The YES has good reliability and validity under Chinese cultural background. It can be used as an effective tool to measure teenagers' activity experience and study teenagers' development in the future.

# ABSTRACT

## POSTER PRESENTATION 32

### Title:

A Study on the Rehabilitation Exercise for Upper Limb Impairment : A Systematic Review

### Author (presenting author underlined):

CHOI M, exercowork, Republic of Korea

BOGJA J, Department of exercise rehabilitation, Gachon University, Korea

LEE KE, Department of Sports Industry, Yonsei University, Republic of Korea

### Background/Aim:

In general, the type of rehabilitation (isometric, isokinetic, isotonic) is important after injury, rehabilitation exercises are performed first with isometric exercises, followed by isokinetic exercises and isotonic exercises. Intervention studies are conducted using various exercise program and measurement methods. The purpose of the study is to identify which rehabilitation exercise types, program, and measurement methods are effective.

### Methods:

We established the PICOTS-SD (Participants, Interventions, Comparisons, Outcomes, Timing of outcome measurement, Setting, Study Design), reviewed 1,540 studies from electronic database of Pubmed/MEDLINE, Google Scholar and finally selected 22 studies(from 2013 to 2022) based on the inclusion and exclusion criteria.

### Results:

Two or more types of exercise were mostly applied, most of which were isometric, especially in the case of stroke, and isometric and isotonic exercise were constituted together. In the case of people with upper limb injury, research was conducted on stroke, shoulder, waist, arm, wrist surgery, or pain patients. As a measurement tool, various studies were conducted to suit the subject and purpose of the study, and not only physical function and physical fitness, but also the degree of disability and related parts were evaluated. Most included common Visual Analogue Scales and several forms of questionnaires and rating of perceived exertion. In terms of exercise program, most of the exercises were resistance exercise, while a small number of exercises were applied in water exercise and ROM.

### Conclusions:

In conclusion, more than two types of exercise were applied to the person with an upper limb injury, and resistance exercise was effective. As a measurement tool, not only physical function and physical strength, but also disability-related physical function evaluation was evaluated as major variable.

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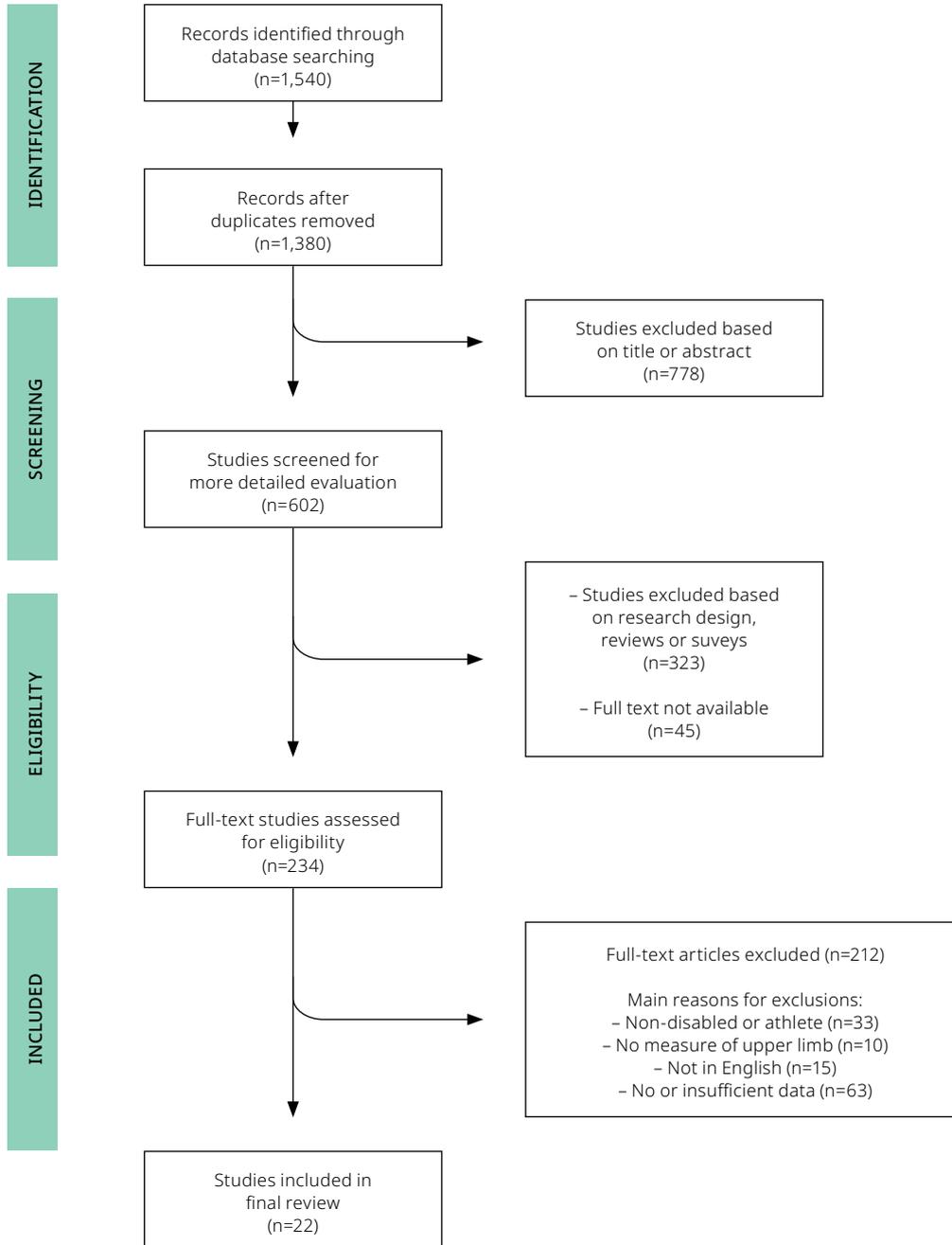
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# ABSTRACT

## POSTER PRESENTATION 32

### Appendix:



# ABSTRACT

## POSTER PRESENTATION 33

### Title:

A Meta-Analysis of a Randomized Controlled Trials on Rehabilitation Exercise for Children with Cerebral Palsy in Korea

### Author (presenting author underlined):

JIN J, Department of Sports Science, University of Seoul, Seoul, Republic of Korea

KIM D, Yongin University

YIM S, Seoul Nat'l University

YANG Y, Seoul Nat'l University

LEE H, University of Seoul

LEE S, University of Seoul.

### Background/Aim:

The purpose of this study was to examine objective and comprehensive results by intervention type and the effects of exercise interventions on the balance and gross motor ability of children with cerebral palsy by using meta-analysis of studies from 2010 to 2021.

### Methods:

This study complied with methodological standards based on 11 evaluation items of AMSTAR (Assessment of Multiple Systematic Review), one of the methods frequently used in meta-analysis research reporting standards. Literature review was conducted through the National Assembly Library, Research Information Sharing Service (RISS), Korea Research Information Service (KISS), and Academic Paper Knowledge Service (Dbpia). 13 articles were finally selected and included in the present study based on the RCT study. For the analysis, meta-analysis programs CMA ver.3 and SPSS 23.0 were used. A total of 230 subjects (133 males, 87 females) were studied, and the effects of intervention type, time, duration, frequency per week, and dependent variables were analyzed.

### Results:

As a result, the intervention program showed an effect size of 0.279 on the gross motor ability and an effect size of 0.235 on the balance. The intervention program showed the largest effect of 0.753 for eye movement followed by 0.384 for trunk movement. And the intervention time was found to be most effective when it was performed for 60 minutes (1.048), 4 times a week (0.307), and 8 weeks (0.353) showed the greatest effect among the sub-group variables. Therefore, results of the study provided the effect size and comprehensive information for each variable through comparison and analysis.

### Conclusions:

Our findings suggest considering different intervention strategies to improve the balance and gross motor ability of children with cerebral palsy.



# ABSTRACT

## POSTER PRESENTATION 34

### Title:

The Latest Development of the International Paralympic Committee Anti-Doping Code and China's Response

### Author (presenting author underlined):

LU C, School of Sports Science, Fujian Normal University, Fuzhou 350117, China

WU Y, School of Sports Science, Fujian Normal University, Fuzhou 350117, China

ZHENG C, School of Sports Science, Fujian Normal University, Fuzhou 350117, China

### Background/Aim:

The purpose of this study was to examine objective and comprehensive results by intervention type and the effects of exercise interventions on the balance and gross motor ability of children with cerebral palsy by using meta-analysis of studies from 2010 to 2021.

### Methods:

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As a result, the intervention program showed an effect size of 0.279 on the gross motor ability and an effect size of 0.235 on the balance. The intervention program showed the largest effect of 0.753 for eye movement followed by 0.384 for trunk movement. And the intervention time was found to be most effective when it was performed for 60 minutes (1.048), 4 times a week (0.307), and 8 weeks (0.353) showed the greatest effect among the sub-group variables. Therefore, results of the study provided the effect size and comprehensive information for each variable through comparison and analysis.

### Conclusions:

Our findings suggest considering different intervention strategies to improve the balance and gross motor ability of children with cerebral palsy.

# ABSTRACT

## POSTER PRESENTATION 35

### Title:

A Systematic Literature Review on the Effects of Participation in Exercise and Nutrition Intervention for People with Bipolar Disorder

### Author (presenting author underlined):

BONG Y, Department of Kinesiology and Sports Studies, Ewha Womans University, Korea  
KIM SY, Department of Kinesiology and Sports Studies, Ewha Womans University, Korea

### Background/Aim:

Bipolar disorder is a chronic condition characterized by elevated and depressive episodes associated with difficulty functioning and poor quality of life. The purpose of this study was to conduct a systematic review on the effects of exercise and nutrition intervention for people with bipolar disorder.

### Methods:

Using 6 data bases (the Research Information Sharing Service, Korean Studies Information Service System, the National Assembly Library, PubMed, the Cochrane library and Web of science), relevant empirical articles were searched from the last 12 years. The search was conducted by combining terms such as bipolar disorder, mood disorder, affective disorder, exercise, physical activity, sports, nutrition, and/or dietary intake. Two reviewers independently assessed the search yields, extracted the data and assessed trial quality.

### Results:

Twelve-empirical studies were identified. There were 5 studies for adults with bipolar disorder, and 7 studies for adults with serious mental illness including bipolar disorder. Positive effects of exercise and nutrition interventions on weight, fitness, cardiovascular disease risk factors, BMI and waist circumference were reported. Dietary behaviours, quality of life and quality of sleep were significantly improved after exercise and nutrition interventions. Moreover, exercise and nutrition programs were effective on decreasing symptoms of depression and mania, and increasing satisfaction levels of adults with bipolar disorder.

### Conclusions:

Results of this study indicated effectiveness of exercise and nutrition programs on some physical and psychological health indicators among adults with bipolar disorder. Further research is needed to determine the recommended frequency, intensity, time, and type of exercise programs for adults with bipolar disorder.

# ABSTRACT

## POSTER PRESENTATION 36

### Title:

Inclusive Physical Activities in the Local Event "Everyone's Play Place" in Sapporo, Japan

### Author (presenting author underlined):

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SENGA A, Department of Special Needs Education, Hokkaido University of Education, Sapporo, Japan  
YAMAMOTO R, Department of Sports Cultural Studies, Hokkaido University of Education, Iwamizawa, Japan  
KONDO N, Department of Social Management, Health Sciences University of Hokkaido, Sapporo, Japan

### Background/Aim:

After ratifying the United Nations Convention on the Rights of Persons with Disabilities in 2014, Japan has initiated various policies towards the realization of an inclusive social system. Children's participation in leisure or recreational activities is related to an increase in skills in other areas, and constructive utilization of leisure time is related to successful living in the community. The purpose of this study is to introduce the practice of inclusive physical activity events in Sapporo, Japan.

### Methods:

The events of "Inclusive Physical Activity for Children," which is called "Minna no Asobiba (Everyone's Play Place)" were held between 2018 and 2021 in public and school gymnasiums of local communities in Sapporo. After the events, a questionnaire survey was conducted with the participants, to gauge the importance of these events for them.

### Results:

Over 200 children with and without disabilities from the local community participated in the events. Activities included trampolines, flying discs, boccia, wheelchair basketball and ball pools. Results from the questionnaires showed that the trampoline was the most popular activity. Further, most of the children and their families reported that they would like to participate in such events again.

### Conclusions:

There is a strong need for a place where children can easily participate in physical exercises regardless of their disability status. Additionally, there are issues to be addressed in the development of these places, such as training the volunteer staff in teaching skills for the play and tackling the cost of transferring equipment to the event venue.

# ABSTRACT

## VIDEO PRESENTATION 1

### Title:

Monitor Athlete's Psychological and Physical Health by Using RESTQ Scale

### Author (presenting author underlined):

GONG LZ, Department of Physical Education, Weifang University, Weifang, China

### Background/Aim:

To assess athlete's training status and psychological health by using the RESTQ scale, To regulate athlete's psychological and physical health through psychological intervention.

### Methods:

We had measured 197 athletes of 9 universities in Shandong using the RESTQ scale. We had trained the athlete's to fill in the scale in advance, ensured that each athlete could fill in faithfully, and fully guaranteed the consistency among the athletes. In this test, 30 days' training plan had been developed. We had invited 15 training specialists and 15 psychologists to independently set structure and weights of the model.

### Results:

Measurement indexes include: Staleness, Burnout, Emotion stress, Fatigue, Physical recovery, Self-efficacy, Self-regulation, Feel good ( $P < 0.05$ ). On the basis of psychological and physiological monitoring of athletes, we had obtained the weight coefficient of various indexes through the Delphi method ( $P < 0.05$ ). The psychological and physical health of athletes was negatively correlated with overtraining (Y). The smaller the value of overtraining (Y), the better the Psychological and physical health; The larger the value of overtraining (Y), the worse the Psychological and physical health. According to the feedback of experts, when  $Y \geq 0$ , We must stop training and urge athletes to rest.

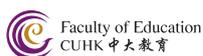
### Conclusions:

There is a strong need for a place where children can easily participate in physical exercises regardless of their disability status. Additionally, there are issues to be addressed in the development of these places, such as training the volunteer staff in teaching skills for the play and tackling the cost of transferring equipment to the event venue.

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# ABSTRACT

## VIDEO PRESENTATION 2

### Title:

Results from the First Philippine Report Card on Physical Activity for Children and Adolescents with Disabilities

### Author (presenting author underlined):

KANG MG, Department of Physical Therapy, University of the Philippines, Manila, Philippines  
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TABLANTE GI, Department of Physical Therapy, University of the Philippines, Manila, Philippines

### Background/Aim:

Available national data indicate that there is a child in every five persons with disabilities in the Philippines. A comprehensive evaluation of the status of physical activity engagement and policy implementation among Filipino children and adolescents with disabilities is vital in the promotion of active healthy lifestyle. This is the first Philippine report card that presents the available evidence on the 10 core physical activity indicators of the Global Matrix 4.0 project.

### Methods:

Published and grey literature were searched for country-specific evidence on physical activity behaviors and sources of influence. Stakeholders representing relevant national offices, special education schools, and advocacy groups provided input on the proposed grades across indicators. Assigned grades were audited by external reviewers under the Global Matrix 4.0 project.

### Results:

Out of the 10 physical activity indicators, only Organized Sport Participation and Government were successfully graded. These indicators were graded F and B, respectively. The rest of the indicators were graded INC as evidenced by limited availability of national-level data.

### Conclusions:

Only few Filipino children and adolescents with disabilities engage in organized sport activities. While government policies exist to support the implementation of physical activity programs and strategies, the extent of uptake, implementation, and evaluation is poorly documented. Overall, assessment of indicators for physical activity behaviors and sources of influence was challenging due to lack of available data. Findings of this first Philippine report card highlights the need to strengthen the documentation, implementation, and evaluation of these indicators among Filipino children and adolescents with disabilities.

# ABSTRACT

## VIDEO PRESENTATION 3

### Title:

Scoping Review of Instruments Measuring Physical Activity Among Children and Adolescents with Obesity:  
A Preliminary Report

### Author (presenting author underlined):

ESGUERRA AA, Department of Physical Therapy, University of the Philippines, Philippines  
KANG MG, Department of Physical Therapy, University of the Philippines, Philippines  
BRIONES JP, Department of Physical Therapy, University of the Philippines, Philippines  
DUCUT SR, Department of Physical Therapy, University of the Philippines, Philippines  
ESPINOSA AG, Department of Physical Therapy, University of the Philippines, Philippines

### Background/Aim:

The prevalence of overweight and obesity in the pediatric population poses a global health challenge. As physical activity (PA) has been identified as one of the interventions to address obesity, it is vital to determine instruments that can assess such outcome. This scoping review aims to map information on the psychometric properties and clinical utility of instruments that measure PA in children and adolescents with or at risk for obesity.

### Methods:

The researchers conducted a two-tiered search across PubMed, Cochrane Library, CINAHL, and PEDro from inception to 28 February 2021. At least two raters independently screened and extracted data per phase of the search. Result were analyzed by synthesizing study characteristics, the instruments measuring PA and their corresponding psychometric properties.

### Results:

Fifty-four instruments measuring PA were identified, with 28 instruments (16 performance-based, 12 self-report) reporting psychometric data. Studies identified were of mixed-population, and not exclusive to those with or at risk for obesity. While all 28 instruments had reports on validity, only nine reported reliability estimates. Reliability and validity range from poor to excellent. Overall reliability, validity, and utility were graded poor to adequate.

### Conclusions:

Among commonly utilized PA instruments, only half had data on psychometric properties. However, the majority of the instruments lack data on reliability while validity values vary per brand or instrument. Limitations identified must be considered when choosing instruments to assess PA. Future research is needed to corroborate the use of existing PA instruments in children and adolescents with or at risk for obesity.

# ABSTRACT

## VIDEO PRESENTATION 4

### Title:

Study Protocol: A Pretest-Posttest Experimental Study on the Effect of a Self-Determination Theory-Based Exergaming Program on Building PA Motivation and Improving MVPA Levels of Children and Adolescents with Autism Spectrum Disorders

### Author (presenting author underlined):

AN M, Department of Human Health Science, Kyoto University, Kyoto, Japan

KATO T, Department of Rehabilitation Science, Kansai Medical University, Osaka, Japan

### Background/Aim:

Studies have indicated that being overweight and inactivity occur at higher rates among children and adolescents with autism spectrum disorders (ASD). Children and adolescents aged 6–17 years should engage in 60-minutes or more of moderate-to-vigorous physical activity (MVPA) daily, to achieve health benefits.

This study examines the effectiveness of an exergaming Ring Fit Adventure (RFA) as the application of the self-determination theory (SDT) and an affinity-based approach (ABP) to boost PA motivation, and thus improve daily MVPA in children and adolescents with ASD aged 6–17 years (IQ:55+).

### Methods:

A three-group with pretest-posttest (PA motivation & objectively measured PA assessments) design, including 20 participants into each group, will be implemented. On twice a week basis (1 hour/session), 20 participants will take part in main and sub-experimental group, respectively for 4 weeks in the community, followed by 4 weeks at home. 20 participants in the control group will have their regular routine for 8 weeks. RFA will be involved in both experimental groups, according to an ABP, which suggests making positive use of negative restricted or repetitive interests of children and adolescents with ASD. RFA was chosen because participants have common interests in video gaming and SDT elements can be applied easier into RFA to meet the fundamental need for autonomy, competence, and relatedness. Specifically, options on selecting the games & modes (autonomy), one-on-one services to relieve sensory stress/adjusting games difficulties (competence), freedom to invite siblings, peers, parents to join the exergaming (relatedness) will be available only in the main group, to develop PA motivation.

PS\* The setting of 8 weeks program might be changed into a total home-based one due to the COVID-19 situation and zoom meetings will be used instead of face-to-face with the main experimental group.

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# ABSTRACT

## VIDEO PRESENTATION 5

### Title:

The Relationship Between Physical Activity and Mental Health Among Adolescents with Attention-Deficit/Hyperactivity Disorder

### Author (presenting author underlined):

YU TW, Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong

### Background/Aim:

Physical activity is beneficial for people of all ages, especially for Attention-Deficit/Hyperactivity Disorder (ADHD) patients. This study was to examine the physical activity (PA) and mental health conditions among adolescents with ADHD, and its relationship to improve ADHD adolescents' mental health.

### Methods:

A total of 21 adolescents with ADHD from four sample secondary schools in Hong Kong participated. We used an accelerometer to monitor and record their daily activity, including Sedentary (SED), Light physical activity (LPA), Moderate-to-vigorous physical activity (MVPA), and steps/day. Also, two Chinese version of Depression, Anxiety and Stress Scale - 21 Items (DASS-21) and Connor and Davidson's Resilience Scale of 25 items (CD-RISC-25) were used to assess ADHD adolescents' mental health, including depression, anxiety, stress, and resilience.

### Results:

Results indicated that the participants spent the most in sedentary 713.11 min/day (11.2%) of the average daily accelerometer wear time of 5892.58 minutes, while LPA 140.13 min/day (2.93%), MVPA 27.03 min/day (0.64%) and took 7038.88 steps/day. Males were in general more physically active than females. Both of them spent significantly high in sedentary time ( $p < .001$ ) and did not meet the MVPA and steps/day guidelines. However, participants' mental health scores measured by DASS-21 and CD-RISC-25 were high. There was no statistical difference between PA levels and mental health factors.

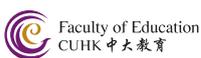
### Conclusions:

The present study suggested that physical activity interventions with different intensity levels should be provided for adolescents with ADHD, and that gender factor needs to be considered when designing and implementing PA interventions in the future.

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