Proceedings of the 2016 North American Federation of Adapted Physical Activity Symposium

Revisiting our Research Assumptions 20 Years On: The Role of Interdisciplinarity

September 21 to 23, 2016

Faculty of Physical Education and Recreation, University of Alberta

Edmonton, Alberta

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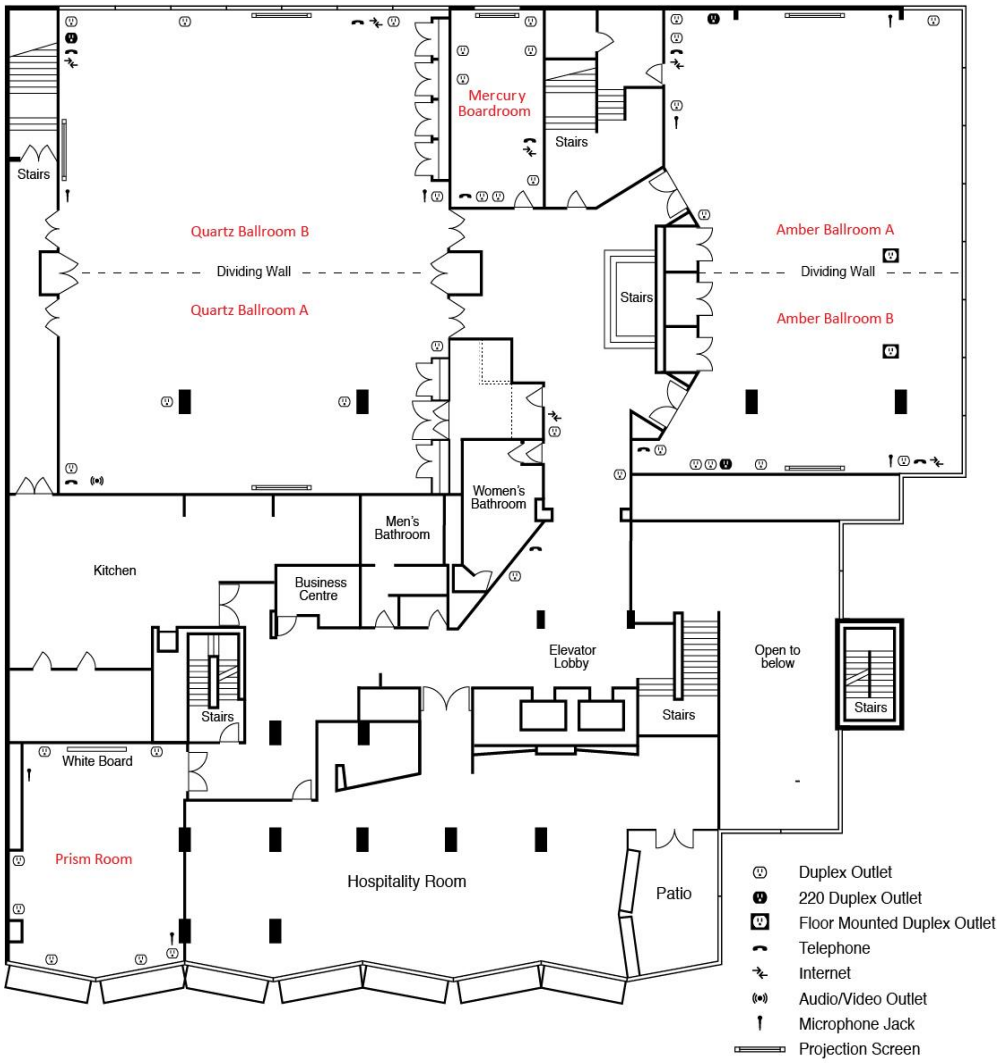
Wed. Sept. 21		
3:00 – 5:00 p.m.	Registration table opens	Matrix Hotel, 2nd floor
5:00pm – 6:00 p.m.	Opening and welcome, followed by keynote speaker, Dr. Dan Goodley	Quartz room
6:00 – 7:30 p.m.	Greg Reid poster session and reception	Quartz room
Thurs. Sept. 22		
8:30 – 9:10 a.m.	Concurrent building sessions	Quartz room A, Quartz room B, Amber room A, Prism room
9:20 – 10:40 a.m.	Concurrent graduate research proposals	Quartz room A, Quartz room B, Amber room A, Amber room B, Prism room
10:55 – 11:55 a.m.	Concurrent research presentations	Amber room A, Amber room B, Prism room
12:00 – 1:00 p.m.	Lunch	Quartz room
1:00 – 1:50 p.m.	Keynote Speaker, Dr. Arya Sharma	Quartz room

Time	Program	Location
2:00 – 3:20 p.m.	Concurrent research presentations	Quartz room A, Quartz room B, Prism Room
3:35 – 4:15 p.m.	Concurrent building sessions	Quartz room A, Quartz room B, Amber room, Prism room
	Transition from the Matrix to the University of Alberta	
6:00 – 6:45 p.m.	Pat Austin graduate award presentation	Room E-121, Van Vliet Complex, University of Alberta
7:00 – 8:30 p.m.	Poster session and reception	Social Street, Van Vliet Complex, University of Alberta
Fri. Sept. 23		
7:00 – 8:15 a.m.	APAQ board meeting	Prism room
8:20 – 9:10 a.m.	Keynote speaker, Dr. Danielle Peers	Quartz room

Time	Program	Location
9:20 – 10:40 a.m.	Concurrent research presentations	Quartz room A, Quartz room B, Amber room A, Amber room B, Prism room
10:55 – 11:55 a.m.	Concurrent research presentations	Amber room A, Amber room B, Prism room
12:00 – 1:00 p.m.	Lunch	Quartz room
1:00 – 1:50 p.m.	Keynote speaker, Dr. Rick Szostak	Quartz room
2:00 – 2:40 p.m.	Concurrent building sessions	Quartz room A, Quartz room B, Amber room, Prism room
2:55 – 3:55 p.m.	Concurrent research presentations	Quartz room A, Quartz room B, Amber room, Prism room
4:00 – 5:00 p.m.	NAFAPA business meeting	Amber room

Matrix Hotel Second Floor



Message from His Worship
Mayor Don Iveson

On behalf of City Council and the people of Edmonton, Alberta's Capital City, I welcome delegates to the North American Federation of Adapted Physical Activity (NAFAPA) 2016 Symposium.

We are honoured to host this symposium in Edmonton. As an inclusive community, we remain committed to offering recreational activities for citizens of all abilities. By empowering all citizens to access physical activity and recreation, this symposium will help promote healthy living and contribute to the quality of life we all aspire to.

I thank the NAFAPA 2016 organizing committee for making this event a success. Your efforts enhance our city's reputation as a leader in research in accessible recreation and physical activity. For those visiting Edmonton, I encourage you to spend time discovering some of the many places of interest in our city.

Yours truly,

Don Iveson
Mayor

Welcome from Dean Kerry Mummery

It is a great privilege to welcome participants of the 2016 North American Federation of Adapted Physical Activity symposium to the University of Alberta, to Edmonton and to Canada. I am excited by, and proud of the work done by the organising committee to bring this important conference to the Faculty of Physical Education and Recreation and the University of Alberta. It is truly a privilege to host scholars from around the globe. Welcome to Edmonton!

As the dean of a truly diverse faculty, I am impressed by the conference theme, "Revisiting our Research Assumptions 20 Years On: The Role of Interdisciplinarity". Many feel that the answers to the ‘really big questions’ will only be achieved through multi- and inter-disciplinary approaches to the challenges that face us.

I would also like to invite all participants to view our new facilities within the Faculty, including the recently completed renovations and expansion to The Steadward Centre for Personal & Physical Achievement. We are excited to show off our facilities and hope you have time to tour them during your visit.

While you are at NAFAPA 2016, I hope that you get to experience all that Edmonton has to offer - taste some of our delicious local cuisine, enjoy some top-class Canadian wine and Alberta craft beer, experience the friendliness of the city and leave with the intent of visiting again.

Enjoy Edmonton and the conference!

W. Kerry Mummery, PhD, FASMF

Professor and Dean

Faculty of Physical Education and Recreation

Welcome from NAFAPA Organizing Chair Janice Causgrove Dunn

On behalf of the Organizing Committee, I am delighted to welcome you to the 13th North American Federation of Adapted Physical Activity (NAFAPA) Symposium in Edmonton, Canada. This Symposium marks 20 years since the University of Alberta hosted the 1996 symposium, themed *Questioning Our Research Assumptions.* The theme for the 2016 Symposium, *Revisiting our Research Assumptions 20 Years On: The Role of Interdisciplinarity*, invites us to reflect upon the ontological and epistemological challenges inherent in a multidisciplinary field through an interdisciplinary lens with the goal of encouraging collaboration among adapted physical activity researchers from different disciplinary perspectives.

The program for the 2016 Symposium features four keynote speakers who bring diverse perspectives from their respective research areas. Dr. Dan Goodley is a professor at the School of Education at the University of Sheffield, and is interested in theorizing disability and challenging the conditions of disablism (the exclusion of people with impairments) and ableism (the contemporary ideals on which the able, autonomous, productive citizen is based). Dr. Arya M. Sharma, is Professor of Medicine & Chair in Obesity Research and Management at the University of Alberta, and presents emerging research on obesity and the perspective that a chronic disease model provides a promising framework for the management of obesity. Dr. Danielle Peers is an Assistant Professor in the Faculty of Physical Education and Recreation at the University of Alberta whose research merges adapted physical activity, critical disability studies, and sport sociology to study the barriers to, and opportunities for, disability flourishing through physical activity. Dr. Rick Szostak is a professor in the Department of Economics at the University of Alberta and an expert in interdisciplinary research practice.

I would like to express a sincere thank you to members of the NAFAPA 2016 organizing committee for their hard work in planning and organizing the Symposium, and to the many other volunteers who have contributed their time and energy. This includes the members of the Scientific Committee, the adjudicators of the Patricia Austin Graduate Student Research Award and Greg Reid Graduate Student Poster Award, colleagues and graduate students who have volunteered to chair sessions, staff from the Faculty of Physical Education and Recreation, and the graduate and undergraduate student volunteers on site.

Finally, we would like to thank our sponsors for their generous financial support of the Symposium: the Social Sciences and Humanities Research Council of Canada (SSHRC), the Kule Institute for Advanced Study (KIAS), and the Faculty of Physical Education and Recreation.

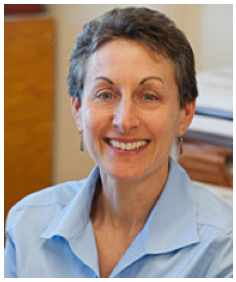
We hope you find the exchange of ideas with colleagues over the next three days energizing and rewarding. Welcome to Edmonton and please enjoy the beautiful fall colours.

Kind regards,

Janice Causgrove Dunn

NAFAP Organizing Chair

Welcome from the President of NAFAPA Susan Kasser



WELCOME to NAFAPA 2016!

On behalf of the NAFAPA Board, it is my great pleasure to welcome you to the 2016 NAFAPA symposium in Edmonton, Alberta. Twenty-four years ago, the first NAFAPA symposium was held in Montreal Quebec. From this first gathering in 1992 to what is now the 13th symposium in Edmonton, NAFAPA has steadily extended its reach. To date, this biennial research symposium has been held in varying time zones across Canada and the U.S., from Montreal to Thunder Bay, from Birmingham to Corvallis.

Much has changed over these past two plus decades. Today, the symposium serves as a meeting place for colleagues with widely diverse research foci, practitioners interested in evidence-based APA practice, graduate students and post-docs beginning their research careers, and other interested parties from around the globe. On the research front, there have also been many advances that have made inroads in increasing physical activity participation and health for those with disabilities – from insights into access and acceptance, to greater understanding of best practices for improving motor performance, fitness and physical activity behavior, to recognizing the broad benefits of targeted exercise prescription and programming. While so much has been realized, there is clearly still much more to be done. As we look ahead, NAFAPA will continue to rely on what has become the hallmark of the organization: its shared commitment and enthusiasm to improve the lives of people with disabilities through APA research and practice and great willingness to learn from one another.

On behalf of the NAFAPA Board, we would like to express our sincere appreciation to the University of Alberta and the Faculty of Physical Education and Recreation for their efforts to host and organize this symposium. We would especially like to thank Dr. Janice Causgrove Dunn, the Conference Chair, and the entire University Organizing Committee as well as Dr. Nancy Spencer-Cavaliere, the Scientific Program Chair, and the other members of the Scientific Committee for their time and energy in putting this meeting together.

Enjoy your visit to Edmonton and the NAFAPA 2016 symposium.

Yours sincerely,

Sue Kasser

NAFAPA President

The 2016 Patricia Austin Graduate Student Award Recipient: Jennifer Leo

The Patricia Austin Graduate Student Award is offered for outstanding graduate student research in adapted physical activity. The award is adjudicated by the University of Alberta in conjunction with the North American Federation of Adapted Physical Activity (NAFAPA) organizing committee. Patricia Austin was a pioneer in the field of adapted physical activity in Canada. After completing her Ph.D. at Michigan State University, she was a faculty member at the University of Alberta for 31 years prior to her untimely death from cancer in 1978. Dr. Austin developed the first undergraduate concentration in adapted physical activity in Canada and contributed significantly to the development of physical activity programs for persons with disabilities. She also made a major contribution to Special Olympics in Canada.

Reflection and Reflexivity on Disability Simulation Use in a Post-secondary Kinesiology Course

Jennifer Leo (Abilities Center), Donna L. Goodwin (University of Alberta)

In this autoethnography, self-narratives of a graduate student teaching assistant were utilized to reflect upon experiences of leading disability simulation activities in a post-secondary kinesiology course. A total of 21 journal entries (59 pages) were recorded and analyzed reflexively to identify patterns and connections across the data. The patterns were held up against the conceptual frameworks of ableism, professional and practical knowledge landscapes, and medical and social models of disability. The findings were presented using vignettes to illustrate the themes: *Lost Intent,* in which the disconnect between publicly shared explicit intentions and hidden from view assumptions were revealed, and *The Non-expert Expert* in which the notion of expert and what it means to be a non-disabled instructor was explored. Through the lens of ableism, assumptions which influence the way we construct disability were uncovered. We need to create space for reflection, reflexivity, and collaboration with the members of the disability community.

The Greg Reid Outstanding Poster Award: Andrew Pitchfor

The Greg Reid Outstanding Poster Award was established in 2014 by Dale Ulrich. The Greg Reid Award recognizes excellence in graduate student research, specifically a graduate student poster. Posters are evaluated based on the importance of the research question, the quality of the study procedures and analysis and the visual appeal of the poster. It is named in honour of Dr. Greg Reid. Dr. Reid was an exemplary researcher and a tireless mentor of graduate students. He made enduring contributions to the field of Adapted Physical Activity, including hosting the first NAFAPA Symposium in Montreal in 1992.

Diurnal cortisol patterns in adolescents with and without Down syndrome

Andrew Pitchford (University of Michigan), Chelsea Adkins (University of Michigan), Dale A. Ulrich (University of Michigan)

See page 22 for full abstract

Past Symposia

Year	City	Conference Director
2014	Ann Arbour, Michigan	Dale Ulrich
2012	Birmingham, Alabama	Laurie Malore
2010	Riverside, California	Terry Rizzo
2008	Indianapolis, Indiana	Katie Stanten
2006	Ann Arbour, Michigan	Dale Ulrich
2004	Thunder Bay, Ontario	Jane Taylor
2002	Corvallis, Oregon	Jeff McCubbin
2000	New Orleans, Louisiana	Jo Cowden
1998	Minneapolis, Minnesota	Allen Burton
1996	Banff, Alberta	E. Jane Watkinson
1994	East Lansing, Michegan	Gail Dummer
1992	Montreal, QC	Greg Reid

Keynote

Critical disability studies: Thoughts on an inter-disciplinary field

Dr. Dan Goodley

The field of critical disability studies is a place populated by people who advocate building upon the foundational perspectives of disability studies whilst integrating new and transformative agendas associated with postcolonial, queer and feminist theories. I will begin by introducing four established approaches to the study of disability; the medical, moral, minority, relational and cultural models. Then we will pay due consideration to four emerging approaches of critical disability studies: Crip Studies; Critical Studies of Ableism; Global South Disability Studies and Dis/ability Studies. The lecture then considers three key themes that may well shape some of the next stages of critical disability studies scholarship, research and activism: (a) The question of the human, (b) Bodies that matter, and (c) The global biopolitics of dis/ability. Disability is a category that captures the marks of discrimination but it also invites a reconsideration about how we live our lives and a category that shapes the kinds of political, moral and ethical questions of our times.

Dr. Goodley is a professor in the School of Education at the University of Sheffield. Dr. Goodley is interested in theorising and challenging the conditions of disablism (the social, political, cultural and psycho-emotional exclusion of people with physical, sensory and/or cognitive impairments) and ableism (the contemporary ideals on which the able, autonomous, productive citizen is based). He is interested in engaging with poststructuralist, postconventionalist, social psychoanalytic and narrative accounts of exclusion and political resistance. Dr. Goodley hopes to engage with the expertise of non-normative children and their families to expose different ways of 'being human'. This has extended his interest in critical disability studies to include ideas from queer theory, critical race, post-colonialism and feminism.

Keynote

Why Obesity Is A Chronic Impairment

Dr. Arya Sharma

In this session I will discuss the complex biology of how the body defends its body weight (which is why short-term weight loss strategies don't work) and why a chronic disease model provides a promising framework for the behavioural management of obesity. With a keen interest in behavioural patterns that influence weight gain and loss, I will debunk obesity myths and translate the plethora of emerging research on obesity. The session will conclude by speaking about the role of movement as it applies to obesity in bodies that move less than others due to impairment.

Dr. Arya M. Sharma, MD/PhD, FRCPC is Professor of Medicine & Chair in Obesity Research and Management at the University of Alberta, Edmonton, Canada. He is also the Clinical Co-Chair of the Alberta Health Services Obesity Program. Dr. Sharma is founder and Scientific Director of the Canadian Obesity Network, a network of over 10,000 obesity researchers, health professionals and other stakeholders. His research focuses on the evidence-based prevention and management of obesity and its complications. He has authored and co-authored more than 350 scientific articles and has lectured widely on the etiology and management of obesity and related cardiovascular disorders. Dr. Sharma is regularly featured as a medical expert in national and international TV and print media and maintains a widely read obesity blog at www.drsharma.ca.

Keynote

Increasing life chances through disability movement(s):Find common cause for interdisciplinary collaboration in APA

Dr. Danielle Peers

Adapted Physical Activity's greatest strengths -- and greatest struggles -- emerge from the breadth of disciplines from which it draws. Studying the complexity of human movement, disability, and inclusion requires this range of physiological, psychological, sociological, and political expertise. As a Paralympian, patient, activist, and socio-cultural scholar, I have benefited from virtually every kind of research in APA. The struggle, however, is to take advantage of this multidisciplinarity by encouraging greater interdisciplinary appreciation, literacy, and collaboration. How do we do this across differing epistemological assumptions and terminology, and sometimes seemingly contradictory aims? For example, how do scholars working on exercise-based rehabilitation collaborate with those seeking to divorce play from medical interventions? In this presentation, I draw from my personal experiences and my current research on disability flourishing to suggest ways that we can engage across difference by focusing on cross-disciplinary aims, such as increasing the life chances of people experiencing disability.

Danielle Peers is an incoming Assistant Professor in the Faculty of Physical Education and Recreation at the UofA. Dr. Peers' research merges adapted physical activity, critical disability studies, and sport sociology to study the barriers to, and opportunities for, disability flourishing through physical activity. She recently completed a Banting Postdoctoral Fellowship (SSHRC) at the University of Concordia, focusing on emerging digital and research-creation methods for studying disability movement(s).

Keynote

Interdisciplinary Best Practices for Adapted Physical Activity

Dr. Rick Szostak

This final keynote session will provide an overview of the steps needed to engage in interdisciplinary research. There is now a fair degree of consensus around a set of strategies that work well in the performance of interdisciplinary research. It will then draw lessons from sessions I attended at NAFAPA, arguing that adapted physical activity should be a self-consciously interdisciplinary field. It should insist that research be performed according to recognized interdisciplinary and disciplinary methodologies. The session will close with recommendations and challenges for adapted physical activity.

Rick Szostak joined the Department of Economics at the University of Alberta in 1985. His B.A. is from McGill and his PhD from Northwestern University. Szostak's research interests span the fields of economic history, methodology, history of technology, ethics, study of science, information science, world history, and the theory and practice of interdisciplinarity. He has served on the Board of the Association for Interdisciplinary Studies for most of the last decade, and was President 2011-4. He has served on the governing councils of the interdisciplinary programs in Humanities Computing, Science Technology and Society, and Religious Studies at the University of Alberta. He is the author of a dozen books, almost 50 journal articles, and 20 book chapters.

Wednesday, September 21st, 6:00 - 7:30 p.m.
Greg Reid Poster Session

Full Amber Room

Diurnal Cortisol Patterns in Adolescents With and Without Down Syndrome E.

Andrew Pitchford (University of Michigan), Chelsea Adkins (University of Michigan), Dale A. Ulrich (University of Michigan)

Introduction: The prevalence of obesity in adolescents with Down syndrome (DS) far exceeds the general population. Cortisol (adrenal hormone) can be obesogenic when dysregulated, but the diurnal patterns of this hormone have not been examined among individuals with DS. This study sought to examine the diurnal cortisol patterns in adolescents with DS and the association between cortisol and adiposity.

Method: A total of 33 adolescents, including 16 with DS and 17 typically developing (TD) peers were matched on gender, age, and Tanner pubertal stage. Subjects completed a DXA scan and collected saliva samples (9) in the morning, afternoon, and night on three days. Samples were analyzed for cortisol concentration (ug/dL) using ELISA techniques. Linear Mixed Modeling with random intercepts and slopes examined the daily trajectory of cortisol between adolescents with and without DS. ANCOVA and Cohen's d examined differences in cortisol between subjects with elevated body fat.

Results or Findings: Diurnal cortisol patterns for adolescents with DS included a higher morning concentration (intercept=.42), but was not significantly different than TD (.40, p=.302). Cortisol declined across hours (slope=-.025, p<.001), but was also not different from TD (-.024, p=.467). Estimated variance of the residuals (.30, p<.001), random intercepts (.08, p=.035), and random

slopes (.0009, p=.044) all suggest large within-subject variability. Group differences in ANCOVA based on body fat percentage were not statistically significant (p>.20). However, effect sizes within the DS group were very large (d>1.7) compared to moderate effect sizes in the TD group (d>.5).

Conclusions or Implications: This study is the first to examine diurnal cortisol in DS, but is limited by the sample size. However, the very large effect sizes suggest there may be differences in cortisol production in adolescents with DS who have elevated body fat. Further research with larger sample sizes for adequate statistical power is warranted.

Acknowledgement of Research Support (Optional): Eunice Kennedy Shriver National Institute of Child Health and Development (F31HD079227) and the Nicholas Leoni Endowment Fund.

Effectivenss of Motor Learning Intervention in Children with Developmental Coordination Disorder: A Systemic Review

Lee Dae Hyoung (Indiana University), Rudolf Psotta (Palacky University)

Introduction: Children with developmental coordination disorder (DCD) demonstrate significant motor deficits that place them at risk for other health problems such as low physical activity and overweight/obesity. There is a need to better understand if motor behavior interventions can effectively improve the motor deficits experienced by this population segment. Thus, the purpose of this systematic review was to describe the characteristics of successful motor behavior interventions in children with DCD.

Method: Studies published between January 1994 and December 2015 were extracted from 5 electronic databases; PubMed, Science Direct, Sport Discus, PsycINFO and Education Resource Information Center. Inclusion criteria were (1) clear identification of DCD, (2) experimental study design with pre and posttest, (3) age range 5 to 12 years, (4) motor behavior based intervention, and (5) publication in peer-reviewed journal.

Results or Findings: Of the 317 studies identified only seven met the review criteria. Three studies used sport-specific interventions, 2 used virtual reality games, and 2 examined task-oriented motor learning and Kinder-kinetics. All studies demonstrated statistically significant improvements in various motor abilities of participants with DCD such as manual dexterity, ball skills, and balance.

Conclusions or Implications: Various types of interventions can improve motor function in children with DCD. However, more rigorous intervention research is needed to: (1) identify motor intervention best practices, (2) examine the sustainability of changes, and (3) examine the impact of the intervention on other physical, health, social and emotional outcomes.

Interleaved Neuromuscular Electrical Stimulation: A Novel Way to Stimulate the Quadriceps Muscles

Francisca Claveria (University of Alberta), Jenny Lou (University of Alberta), David Collins (University of Alberta)

Introduction: Neuromuscular electrical stimulation applied over a muscle belly (mNMES) or nerve trunk (nNMES) produces contractions that increase functionality and reduce secondary complications for people with a spinal cord injury. Unfortunately, rapid contraction-fatigue limits the benefits of mNMES and nNMES. We have found that alternating ("interleaving") NMES pulses (iNMES) between the tibialis anterior muscle belly and common peroneal nerve trunk results in less contraction-fatigue than mNMES and nNMES alone. In tibialis anterior, iNMES recruits different motor units with every other stimulus pulse, reducing motor unit discharge frequencies, metabolic demand and contraction-fatigue. iNMES has not been tested in the quadriceps, which are stimulated for rowing and cycling. We hypothesized that iNMES will reduce contraction-fatigue of the quadriceps, compared to mNMES and nNMES.

Method: Ten healthy participants (5 males and 5 females; 28.2±10.7 years) were recruited. iNMES, nNMES, and mNMES were randomly tested in different sessions. Each session incorporated a fatigue protocol consisting of 170 contractions (0.3s "on", 0.7s "off"). Contraction-fatigue was quantified by the fatigue index (FI: peak torque during the last five contractions divided by the peak torque during the first five contractions multiplied by 100). A two way repeated measures ANOVA was used to identify statistical differences between FIs for each NMES type.

Results or Findings: The FIs were 54±12, 89±40 and 76±16 (mean±SD), for mNMES, nNMES, and iNMES, respectively. By the end of the fatigue protocol, nNMES and iNMES resulted in significantly less contraction-fatigue than

mNMES. There was no difference in contraction-fatigue between nNMES and iNMES.

Conclusions or Implications: The use of iNMES or nNMES in place of mNMES may improve outcomes and maximise the benefits of NMES-based rehabilitation programs. Our next step will be to compare iNMES and nNMES with sequential NMES, a promising new approach in which stimulus pulses are rotated between multiple electrodes over the muscle belly.

Efficacy of Sustained Physical Activity on Physical Fitness Among Children with Intellectual and Developmental Disabilities

Kyla Collins (Texas Christian University), Phil Esposito (Texas Christian University) & K.L. Staples (University of Regina)

Introduction: One in three children are considered overweight or obese. Children with intellectual and developmental disabilities (IDD) have a greater prevalence of obesity and obesity-related health conditions, along with decreased levels of physical activity and fitness, placing them at increased risk of diseases associated with inactivity. This underscores the importance of providing programs that are designed to address these health disparities. The purpose of this study is to determine the efficacy of a structured physical activity program for children with IDD on physical fitness. A secondary purpose is to measure the maintenance improvements with continued program participation.

Method: 32 children (22 boys, 10 girls) between the ages of 7 and 12 years participated in a 10-week (15-hour) structured physical activity program. Participants were diagnosed with ASD (n=20), Down syndrome (n=3), global developmental delay (n=5), fragile-x syndrome (n=2) or fetal alcohol spectrum disorder (n=2). 2 participants had BMI percentiles indicating they were considered underweight, 21 fell within healthy weight ranges, 1 was overweight and 8 participants were considered obese. 22 participants completed a second 10-week program. Levels of health related physical fitness were assessed using the Brockport Physical Fitness Test before and after participation in each program.

Results or Findings: Following completion of the first 10-week program, paired samples t-tests were used to demonstrate significant improvements in the 20m PACER, modified curl-ups, isometric push-ups, and sit-and-reach. Percent change quantifies the improvements and maintenance of these fitness gains.

Conclusions or Implications: Providing opportunities for children with IDD to participate in structured physical activity can improve aerobic capacity, strength, endurance and flexibility, leading to improved physical fitness and overall health and wellbeing. The goal of such programming is to promote lifelong participation as healthy children are more likely to continue these habits into adulthood, thus reducing future health risks.

Decreased Excitability of the Nerve Under the Stimulating Electrodes Contributes to "Fatigue" of Electrically-Evoked Contractions

M. John Luu (University of Alberta), Kelvin E. Jones (University of Alberta), David F. Collins (University of Alberta)

Introduction: There are numerous benefits in using electrical stimulation (ES) as a rehabilitation tool. Unfortunately, these benefits are limited by rapid muscle fatigue. Muscle fatigue during ES is explained, in part, by changes in the excitability of nerves under the stimulating electrodes, resulting in fewer muscle fibres responding to the ES. When this occurs, the stimulation intensity must increase to produce consistent muscle contractions. The present study was undertaken to determine how decreases in nerve excitability contribute to muscle fatigue when stimulating at different frequencies.

Method: Seven healthy participants took part in this study. ES was delivered at 20, 40, and 60 stimuli per second to the common peroneal nerve to generate 480 contractions of the tibialis anterior (TA) muscle over 8 minutes. Contraction fatigue was measured by the decline in torque produced by the muscle over time. Changes in nerve excitability were inferred by changes in the stimulation intensity required to reach a constant target output. Stimulation intensity was recorded every second, before and during the 8 min of ES. Single pulses of ES were delivered over the TA to measure the muscle’s maximal torque output. A multiple regression analysis was done to determine the relative contributions of nerve and muscle to the declining torque output.

Results or Findings: Results show that there was a decrease in nerve excitability during ES, and this change was larger and developed faster at higher stimulation frequencies. Contraction fatigue was strongly predicted by changes in nerve excitability at all frequencies, and less so by changes in the muscle’s maximal torque output.

Conclusions or Implications: Decreased nerve excitability plays a role in contraction fatigue that develops during ES and the magnitude and time course are frequency dependent. The next step would be to measure contraction fatigue while increasing stimulation intensity to combat decreased nerve excitability.

Effectiveness of a Technology Based Physical Activity Program in Adults with Intellectual Disabilities

Kira Markus (University of Delaware), Jeena Bonutto (Texas Christian University), Mackenzie Vineyard (Texas Christian University), Angela Baleztena (Texas Christian University), Phil Esposito (Texas Christian University)

Introduction: Physical activity of individuals with intellectual disabilities (ID) is lower compared to their peers without ID. This decreased physical activity places individuals with ID at risk to be overweight or obese, have low cardiorespiratory fitness, and decreased muscular strength. The purpose of this study was to determine if a Nintendo Wii based exercise program is as effective as Traditional exercise program for individuals with ID. A secondary purpose was to examine differences in intensity of physical activity between the Nintendo Wii group and the traditional training group.

Method: Participants were 14 (8 females; 6 males) individuals with ID between the ages of 18-25 years old. Individuals were randomly placed into two groups: Nintendo Wii Fit and Traditional exercise. After randomization participants completed a pre-test consisting of one-repetition maximum leg press and chest press along with a 20m PACER. Training sessions for both groups were 60 minutes, once per week for eight weeks. Using the Wii or in a traditional setting both groups completed triceps extensions, lunges, squats, push-ups, boxing, and rowing. Participants wore an Actigraph accelerometer during training sessions to measure physical activity intensity.

Results or Findings: Both groups improved from pre-test to post-test on all three measurements. Comparing post-test values from the Wii group to the traditional group, there was no significant difference for the PACER ($p=0.22$; $ES=0.84$) or Chest Press ($p=0.69$; $ES=0.26$). Participants in the Wii group showed greater improvement in the Leg Press ($p=0.59$; $ES=0.39$). Participants in the traditional training group engaged in significantly more moderate-to-

vigorous physical activity (p=0.01; ES=0.88) and significantly less sedentary physical activity compared to those in the Nintendo Wii group (p = 0.01, ES=0.73).

Conclusions or Implications: All participants improved from pre-to-post-testing. Since there were no significant differences between the two training groups, the Nintendo Wii could be an effective alternative or complement to Traditional exercise approaches.

Exercise Participation Motives: Confirmatory Factor Analysis and Validation

Wei-Ru "Andy" Yao (Georgia State University), Deborah Shapiro (Georgia State University)

Introduction: Regular physical activity has been proven that it can lead to social, psychological and physical benefits. Knowing the reasons why people participate in physical activity is crucial for researchers and practitioners especially for those working with populations of children and youth with disabilities who tend to have decreased access and reduced participation of in physical activity compared with typical developing children. Using a validated instrument measuring the motives of parents, who are considered as the most influential roles in guiding child's behaviors and decision-making, for their child's participation in physical activity could help researchers and practitioner effectively design appropriate strategies and make evidence based decisions to increase the physical activity levels of children and youth with disabilities. The purpose of this study was to validate the psychometric properties of the Exercise Participation Motives (EPM) questionnaire developed by Wu & Liao (2011) for families of children with disabilities.

Method: One hundred and eighty four parents (n = 78 fathers; n = 106 mothers) of children (n = 113 boys; n = 71 girls) with physical, hearing, visual, and intellectual impairments completed the 29-item EPM were recruited. Confirmatory factor analysis was conducted to analyze the dataset through LISREL version 8.8.

Results or Findings: The goodness-of-fit indices confirmed a six-factor model (personal fitness and skill improvement, social expectation and external factors, competition and challenge, social enhancement, positive emotion and friendship, and teamwork; $\chi 2 = 808.67$, RMSEA = .08, AIC = 970.67, CFI = .95, SRMR = .09).

Conclusions or Implications: In general, the structures of the EPM remain intact and support the use of this instrument for understanding the motives of parents for sport and physical activity engagement by their children with disabilities. Retesting the model using a larger, heterogeneous sample is encouraged in future study.

Teleexercise for People with Spinal Cord Injury: A Mixed Methods Feasibility Case Series

Byron Lai (University of Alabama at Birmingham), James H. Rimmer (University of Alabama at Birmingham/Lakeshore Foundation, Birmingham), Beth Barstow (University of Alabama at Birmingham), Emil Jovanov (University of Alabama in Huntsville),C. Scott Bickel (University of Alabama at Birmingham/Lakeshore Foundation, Birmingham)

Introduction: Innovations in technology hold promise for remotely delivering safe and effective bouts of exercise in the home for people with spinal cord injury (SCI). This study tested the feasibility of a remotely-monitored home exercise program for persons with SCI.

Method: 4 adults with SCI (mean age= 43.5 ± 5.3 years) completed an 8-week aerobic exercise intervention (30-45 mins, 3x/week) and 3-week non-intervention period. After completion, participants were interviewed to explore their perceptions of the program. Instruments included a tablet, physiological monitor, and custom application that delivered video-feed to a remote-trainer and monitored and recorded exercise data in real-time. Feasibility was assessed via: implementation, acceptability, and pre/post efficacy.

Results or Findings: Participants completed all 24 intervention sessions with 100% adherence. The teleexercise system successfully recorded 85% of all exercise data. The exercise program appeared well tolerated by participants. Participants reported that teleexercise circumvented commonly reported barriers to exercise participation. Moderate effects were found for aerobic capacity (Cohen’s d = 0.47) and physical activity (Cohen’s d = 0.59) pre- to post- intervention.

Conclusions or Implications: A teleexercise program can be feasibly delivered at home for persons with SCI. Participants responded favorably to the

intervention and valued teleexercise for its ability to overcome common barriers to exercise. Study results are promising but warrant further investigation in a larger sample.

Affective Experiences of Injured Military within Different Physical Activity Settings

Gwang-Yeon Hwang (Texas Women's University), Ronald Davis (Texas Women's University), Simon Driver (Baylor Institute for Rehabilitation, Dallas)

Introduction: PL 111-84, Section 724 (2011) created military transition units for wounded, injured, and ill personnel. Warrior Transition Units (WTUs) are designed to transition soldiers from military life to civilian life through care plans that include adaptive reconditioning with sport and physical activity. Participation in physical activity can positively impact feelings of well-being (affect). The purpose of this study was to examine a change in affective responses following daily physical activity participation in a different setting for injured military personnel (positive - PA , negative - NA, tranquility - TR, fatigue - FA).

Method: The Physical Activity Affect Scale measured affect of 35 injured veterans (18-59 yrs) before and after physical activity (Lox et al., 2000) for three groups: (1) current WTU (recreational), (2) previous WTU (competition), or (3) no WTU (competition). Recreational activities included wall climbing, indoor kayaking, and golf; competition was a wheelchair basketball tournament. A 2 × 3 factorial ANOVA was used to test main and interaction effects for each affect component.

Results or Findings: A significant main effect was found for FA across time ($p < .001$); no other effects within or across groups were significant. Moderate - large effect sizes (Cohen's d) for the WTU recreation group existed for all components (PA .7; NA .5; TR .8; FA 1.1); small effects for both competition groups existed. Results indicate WTU recreational activity identified expected changes in affect (i.e., improved PA and TR, reduced NA, increased FA). Competition experiences, with or without exposure to a WTU, had the opposite effect on affect (i.e., reduction in PA and TR, increase in NA). Only the pre-post

change in FA had a similar profile for all three WTU groups (Rec with; Comp with; Comp without).

Conclusions or Implications: The use of a WTU for reconditioning injured veterans through sport and recreation activities seems to be appropriate; however engagement in a competitive athletic environment needs carefully consideration.

A Model of Self-Compassion and Physical Activity Engagement for Individuals with MS

M. Nery-Hurwit (Oregon State University), Joonkoo Yun (Oregon State University)

Introduction: Physical activity (PA) has been shown to improve symptoms and function for individuals with Multiple Sclerosis (MS), however this population is typically sedentary. Health professionals are challenged to find ways to improve health outcomes and PA for individuals with MS. Considering the unique and often degenerative condition of MS, it is important for health professionals to utilize effective methods for increasing engagement in positive health behaviors to promote overall wellness. One such behavior, self-compassion, has been shown to increase motivation for engaging in exercise and is related to a higher quality of life. Therefore, this study tests a conceptual model of self-compassion, self-determined motivation, and engagement in PA among the MS population.

Method: Individuals with MS (n = 260) were recruited via social media, e-newsletters, and in-person through MS support groups to participate in an online or printed survey assessing fatigue, self-compassion, psychological needs related to exercise, and PA engagement. Structural equation modeling was used to test the conceptual model of self-compassion on health-promoting behavior.

Results or Findings: Participants were predominantly white (90%) females (84%), with a mean age of 49 and relapse-remitting MS course (73%). Preliminary analysis shows that self-compassion significantly predicts engagement in PA, mediated by self-determined motivation. Fatigue showed a moderate negative effect on self-compassion, and self-compassion moderately predicted self-determined motivation in this population. However, the effect of self-determined motivation on PA was small.

Conclusions or Implications: These results demonstrate that self-compassion may mitigate the effects of poor health states (i.e., fatigue) and improve motivation to engage in PA. Future studies should investigate why increased self-compassion and motivation are not having a greater influence on PA engagement in this population, and what other variables may be moderating this relationship. These results can inform future interventions to improve engagement in health behaviors and improve overall wellness for individuals with MS.

Acknowledgement of Research Support: The contents of this study were developed under a grant from the US Department of Education, #H325D100061. However, the contents do not necessarily represent the policy of the US Department of Education, and you should not assume endorsement by the Federal Government. Project Office, Louise Tripoli.

A Comparison of physical self-concept and body image between Taiwanese and U.S.A. Special Olympic Athletes: An exploratory study

Cheng-Chen Pan (Texas Woman's University), Ronald Davis (Texas Woman's University)

Introduction: Physical self-concept and body image are insights for understanding one's bodily movement and activity experiences. Reports of differences between individuals with Intellectual Disability (ID) engaging in sport are minimal. This study explored a comparison in physical self-concept and body image between Taiwanese and U.S.A. Special Olympic athletes.

Method: A total of 93 Special Olympic athletes (46 Taiwanese vs 47 Americans) aged 12-30 years completed three forms of measure: (1) Intellectual Disability Version of the Very Short Form of the Physical Self-Inventory (PSI-VS-ID) for physical self-concept, (2) the Figure Rating Scale for body image, and (3) anthropometric measures (body mass index [BMI] and waist-to-height ratio [WHtR]). The psychological constructs of the PSI-VS-ID include global self-worth (GSW), physical self-worth (PSW), physical condition (PC), sports competence (SC), physical attractiveness (PA), and physical strength (PS).

Results or Findings: A one-way ANOVA revealed that several group differences were confirmed for physical self-concepts (PA, $p < .001$, and SC, $p = .03$), body images (ideal body image, $p = .05$) and two anthropometric measures (BMI, $p = .02$, and WHtR, $p < .001$). The U.S.A athletes perceived higher PA and SC than Taiwanese athletes. Taiwanese athletes preferred to be a bigger body shape in their ideal body image, however, U.S.A. athletes also had greater BMI and WHtR than Taiwanese athletes. A MANOVA analysis (country by status of obesity) revealed no interaction effect of country and status of obesity. However, the two main effects of country and status of obesity ($p = .01$ for countries and; $p < .001$ for obesity), when controlling the age and gender.

Conclusions or Implications: 1. Several physical self-concepts, body image, and anthropometrics appeared to be different between the two groups of athletes. 2. Additional research should be undertaken to determine how physical self-concept could be improved in the sports participation in athletes with ID.

Acknowledgement of Research Support: We thank Special Olympics Chinese Taipei and Special Olympics Texas for assistance with the recruitment that greatly helped the study.

The Pilot Verification of disHBSC Study by Students with Visual Impairment

Daniel Mikeška, Ondřej Ješina, Martin Kudláček, Michal Kalman, Martin Kučera

Introduction: Research focuses on pilot verification of new created questionnaire disHBSC for a population of students with visual impartment based on origin of HBSC questionnaire.

Method: Contribution will be based on the methodology of international HBSC study - Health Behaviour in School Aged Children. The actual treatment questionnaire for visual impairment participants is implemented in cooperation and coordination with Palacky Univerzity (Faculty of Medicine) and Pavol Josef Šafárik Univerzity in Košice. DisHBSC study is a modified version of questionnaire in the concept and management HBSC study. The philosophy of this innovative technology is the inclusion of previously marginalized groups of people with special educational needs while respecting their specificities and needs. Breadth of issues incorporated in the questionnaire disHBSC also contains demographic particular school environment, participation of students and parents, health promotion, nutrition, physical activity, violence and bullying and risky behavior (smoking and alcohol), peer relationships, school and life aspirations.

Results or Findings: The results submitted differences observed in a number of determinants influencing the lifestyles of children and youth with visual impairments. Some of the parameters we have reached alarming results and offer plans for solution. Next results will submit information on daily physical activity, reasons, causes, options and locations of physical activities. Leisure time for people with visual impairments is not only active motion mode, as well as other monitored parameters of the sample. The exact date will be specified later.

Conclusions or Implications: The study clearly presents a very disturbing facts. Children and young people with visual impairment far fall short of the standards and recommendations established by the WHO and general physical activities devoted little time.

Acknowledgement of Research Support: The aim of study is to upgrade the standardized international Health Behaviour in School Aged Children questionnaire. Base on analysis of school environment and the specifics of groups of students with visual impairment.

Using Technology to Teach Physical Activity to Children with Autism Spectrum Disorders: A Pilot Study

Melissa Bittner (Texas Woman's University), B. Rhett Rigby (Texas Woman's University), Lisa Silliman-French (Texas Woman's University), Katherine K. Rose (Texas Woman's University)

Introduction: Deficits in social behavior and communication skills, often observed in individuals with autism spectrum disorders, are correlated with deficits in functional motor skills. The recently developed Exercise Connection app is designed to communicate these motor skills, and integrates evidence-based practices such as visual support and video modeling supported by The National Professional Development Center on Autism Spectrum Disorders. The purpose of this study was to determine the effectiveness of the Exercise Connection app to traditional teaching methods by measuring energy expenditure and heart rate during physical activity in children with autism spectrum disorders.

Method: Six children, ages 5 to 10 years, diagnosed with autism spectrum disorders were recruited. Each participant performed a variety of object control and locomotor skills established by the Test of Gross Motor Development-2 once per week for four weeks. Exercise technique was communicated and demonstrated using either the Exercise Connection app or traditional practice-style teaching methods. Energy expenditure (METs) and heart rate (bpm) were measured continuously during each session. A Friedman’s test and a Wilcoxon signed-rank test were performed to assess any differences across conditions and any differences between the use of the Exercise Connection app and traditional teaching methods, respectively. The significance level was set at 0.05.

Results or Findings: There was a difference in METs ($p = 0.01$) and heart rate ($p = 0.02$) across all conditions. There were no differences in METs when using

the app versus practice-style instruction with regard to locomotor ($p = 0.35$) or object control skills ($p = 0.14$). There was also no difference in heart rate when using the app versus practice-style instruction with regard to locomotor ($p = 0.40$) or object control skills ($p = 0.75$).

Conclusions or Implications: The Exercise Connection app elicits similar increases in the intensity of physical activity when compared to traditional teaching methods in children with autism spectrum disorders.

(Effects of a Peer-Mentoring Physical Activity Program for College Students with Autism Spectrum Disorder

Steffanie Colgate (California State University Northridge), Dr. Teri Todd (California State University Northridge), Dr. Nancy Miodrag (California State University Northridge)

Introduction: Individuals with Autism Spectrum Disorder (ASD) experience difficulties in social and motor domains and due to these deficits engaging in physical activity (PA) may be a challenge. The majority of individuals with ASD lead sedentary lifestyles. Research has shown that (PA) patterns of youth with ASD declines with age (Pan & Frey, 2006), but little is known about fitness and activity levels of college students with ASD. Peer mentoring programs have been used as a tool to increase PA in both healthy individuals and those with disabilities. This study aims to assess fitness levels of college students with ASD and evaluate the effects of a peer mentoring program on PA and fitness.

Method: Seven male college students with ASD participated in a 10-week PA program. Kinesiology majors were peer mentors and met with the participants for 2.5 hours each week. Aerobic fitness (1 mile walk), muscular strength (push-ups, sit-ups) and flexibility (sit and reach) were assessed before and after the 10-week program. Pre-post data were analyzed with paired samples t-tests. Adherence and type of activities were tracked.

Results or Findings: Pre-tests results revealed low levels of fitness for all measures (3-44% of national average). Following the 10-week program there was a significant increase in aerobic fitness (VO2 max), ($t(6) = 11.42$, $p<.01$). There was slight improvement in muscular strength and no change in flexibility. Adherence was high and participants engaged in a variety of activities during the program such as weight-lifting, basketball, and rock-climbing.

Conclusions or Implications: A peer-mentoring PA program may be an effective intervention for college students with ASD. In addition to increasing PA and fitness, participants may gain social opportunities and make friends.

Acknowledgement of Research Support (Optional): CSUN Autism Affinity Group; CSUN College of Health and Human Development

Associations Between Autism Severity and Motor Competency, Health-Related Physical Fitness, and Physical Activity among Individuals with ASD: A Systematic Review

Michaela A. Schenkelberg (University of South Carolina)

Introduction: Individuals with Autism Spectrum Disorders (ASD) engage in less physical activity (PA) than typically developing (TD) peers, and various factors, such as motor competency (MC) and health-related physical fitness (HRPF), influence PA. Studies have reported that individuals with ASD have greater MC deficits and demonstrate poorer levels of HRPF than TD peers. While these deficits have been observed among the overall ASD group, there is widespread variability across ASD subgroups and levels of cognitive functioning. The purpose of this review was to systematically search and analyze the literature to better understand the association between ASD severity and MC, HRPF, and PA.

Method: The systematic review followed the PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis) statement and used a set of carefully selected keywords to identify articles. Five electronic research databases (PubMed, PsychInfo, PhysEd Index, Web of Science, and Academic Search Complete) were used to identify studies that measured the association between ASD severity and MC, HRPF, and PA. Inclusion criteria included participants with a diagnosed ASD and measure of severity, quantitative measure of MC, HRPF, or PA, and measure of association between severity and MC, HRPF, or PA. Case studies and qualitative studies were excluded from the review.

Results or Findings: The literature search resulted in 860 identified articles. After removing duplicates, identifying additional articles through other sources (n=7), and screening titles for relevancy 43 articles remained. After screening abstracts, 23 articles met eligibility criteria (MC, n = 19; HRPF, n = 3; HRPF

+PA, n = 1). Measures of severity were defined by a subgroup of ASD (n = 7), intelligence (n = 1), symptom severity (n = 9), or a combination of methods (n = 7). Patterns emerged between the association of severity and MC. There was not enough evidence to draw conclusions regarding the association between severity of autism and HRPF or PA.

Conclusions or Implications: Individuals with greater ASD severity appeared to demonstrate greater impairments in MC. Future research should develop strategies to enhance MC across all levels of ASD severity. Further, it may be necessary to consider severity when investigating MC, HRPF, and PA in this population.

Thursday, September 22nd, 8:30 - 9:10 a.m.
Concurrent Building Sessions

Quartz Room A

To Increase Awareness and Opportunities, We Must Bridge the Information Gap on Physical Activity Programming for Individuals with Disabilities

Marquell Johnson (University of Wisconsin-Eau Claire), Renee Culbertson (University of Wisconsin-Eau Claire)

Primary issue(s): Community-based physical activity programming efforts for individuals with disabilities across the lifespan and resulting outcome measures from these efforts

Discussion on how programs are using outcomes measures to inform other stakeholders of the health promotion needs and health status of individuals with disabilities in their communities

Which stakeholders will have the most influence on improving the overall wellbeing of individuals with disabilities?

Session significance: This session will provide attendees with insight on how individuals with disabilities across the lifespan experience physical activity through community-based outreach. This session will also identify outcome measures from these programming efforts that can be used to inform other stakeholders that impact the overall wellbeing of individuals with disabilities

Relation to conference theme: This session will provide insight on the use of evidence-based programming when serving individuals with disabilities and the utilization of the outcomes derived from them. Are we moving forward professionally or standing still from an epistemological perspective?

Description of session: Identify the physical activity programming efforts being conducted by community-based outreach programs serving individuals with disabilities across the lifespan (potential themes may include sports, fitness/ health promotion, nutrition, vocational and/or life skills)

Identify and describe outcome measures that are being collected through physical activity programming efforts serving individuals with disabilities across the lifespan (both quantitative and qualitative)

Discussion on how programming efforts and outcome measures are shared among stakeholders (i.e. healthcare providers, social service agency, family members) that impact the overall wellbeing of individuals with disabilities

Reference: Krahn, G.L., Walker, D.K., & De-Araujo, R.C. (2015). Persons with disabilities as an unrecognized health disparity population. American Journal of Public Health, February 17, e1-e9

Rimmer, J.H. (2015). The nexus of rehabilitation and exercise: Where and why the two shall meet. Kinesiology Review, 4, 85-90.

Quartz Room B

Building APAQ as a Scientific Journal: Critical Issues

Geoff Broadhead (Kent State University), Terry Rizzo (California State University), Marcel Bouffard (University of Alberta)

Primary issue(s) to be presented and discussed: How has the quality of APA science published in APAQ changed/improved since #1 issue in 1984?

What are the chances for or impediments to further improvement?

Session significance: Through presentations and discussion, issues relevant to disability research; research methodology, research preparation, and APA practice will be highlighted.

Relation to conference theme: A continuing basic research assumption is that APAQ seeks to publish the highest quality of APA science submitted.

Description of session: Selection of topics such as: Formulation of Policies: Categories of papers submitted. Composition and functioning of the Board: Diversity in background, expertise, and country. Selection and evaluation of reviewers: Review process, quality of reviews, and time of review. Influence of Manuscript Central (strengths and weaknesses). Relevance of academic preparation of university faculty.

Reference: APAQ Mission Statements (early 1984 issue, and latest 2016 issue).

Amber Room A

Re-imagining Otherwise: Alternative Approaches to APA Research and Pedagogy for Participants with Complex Profiles

Maureen Connolly (Brock University), Elyse Lappano (Brock University)

Primary issue(s) to be presented and discussed: Re-imagining otherwise: alternative approaches to APA research and pedagogy for participants with complex profiles

We wish to address and unsettle the relative lack of research and pedagogic attention given to clients typically assigned to ‘low functioning’ or ‘severe’ locations on various disability spectra, be they physical, developmental, cognitive or mental health contexts.

Session significance: We have spent the last two decades working with complex profile participants of various ages in both research and pedagogic contexts. Our approaches have yielded findings that have improved the movement repertoires and lived relation options of our participants, have increased the observational, programming and instructional skill sets of our students who work with participants, and have extended our research practices into more flexible, adaptable, interdisciplinary and authentically embodied designs.

Relation to conference theme: Our approaches to both research and pedagogy are enactments of the thematic of revisiting assumptions and engaging interdisciplinarity. Our phenomenological, semiotic, critical disability studies, APA and activist oriented scholarship/pedagogy blends have compelled us to revisit assumptions in ongoing ways as well as adapt and integrate research and instructional design and theoretical orientations in nimble and reflective fashion.

Description of session: Overview of several research and instructional design exemplars from our practice with attention to embedded, underlying theoretical premises

Description of a complex case project with attention to design and instructional consultation, decision making, implementation and monitoring and to the challenges and barriers associated with this approach to research and teaching

Discussion and interaction with motivated and interested session participants on resonant experiences, issues identification, action-oriented next steps.

Reference: Any or all of the readings below would be helpful:

Fitzgerald, H. (2006) 'Disability and Physical Education'. In D. Kirk, D. Macdonald & M. O'Sullivan (eds.) The Handbook of Physical Education, Thousand Oaks, CA: Sage, pp.752-766.

Barnes, C. (2014) 'Reflections on doing emancipatory research' in J. Swain, S. French, C. Barnes and C. Thomas (eds.) Disabling Barriers –Enabling Environments, 3rd Edn. London: Sage, pp. 37-44.

Cameron, C. (2014) 'Disability Research'. In C. Cameron (ed.) Disability Studies, a Student's Guide. London: Sage, pp. 33-36.

Prism Room

Introduction to Secondary Data Analysis on Adapted Physical Activity Research: Connecting Physical Activity and Health

Stamatis Agiovlasitis (Mississippi State University), John Foley (State University of New York at Cortland), Jooyeon Jin (University of Wisconsin at La Crosse), Joonkoo Yun (Oregon State University)

Primary issue(s) to be presented and discussed: This session will explore how to conduct secondary data analyses in adapted physical activity research. Three specific topics include: (a) to address advantages and disadvantages of conducting secondary data analyses; (b) to identify available secondary data sources; (c) to illustrate the process of planning and conducting such studies; (d) to discuss how to advance body of knowledge in adapted physical activity using secondary data analyses. Three studies based on nationally representative data-sets will be presented as examples. All studies are linked with a common theme: physical activity and health among individuals with disabilities.

Session significance: One of the challenges in adapted physical activity research is recruiting large and representative samples of persons with disabilities. Many studies employ small non-representative convenience samples, and they consequently limit the generalizability and increase chances for type I error. Secondary analyses using well-defined population-based data may be a promising approach to overcome this challenge.

Relation to conference theme: This session closely aligns with the conference theme because it challenges common practices of quantitative research and provides alternative strategies for producing more generalizable research findings.

Description of session:

Introduction

What is secondary data analysis?

Strengths and limitations of secondary data analysis.

Where and how can we get access to secondary data?

Conducting research with secondary dataset with specific examples

Associations among BMI, Strength, and Physical Activity, and Health in children with disabilities from the National Youth Fitness Survey.

Social Determinants of Health among Individuals with Chronic Disabling Conditions from National Health Interview Survey

Associations among residential setting, physical activity and Health Outcomes among Adults with Intellectual Disabilities from National Core Indicators.

Conclusions

How can studies using secondary data analyses advance the body of knowledge in adapted physical activity?

Reference: Smith, A.K., Ayanian, J.Z., Covinsky, K.E., Landon, B.E., McCarthy, E.P, Wee, C.C. & Steinman, M.A. (2011). Conducting high-value secondary dataset analysis: An introductory Guide and Resources, Journal of General Internal Medicine, 26 (8), 920-929.Title of Poster

Thursday, September 22nd, 9:20 - 10:40 a.m.
Concurrent Graduate Student Sessions

Quartz Room B

Establishing the Validity of the Functional Movement Concepts Tool

Jaclyn Fox (Brock University)

Supervisor Name & Affiliation: Gail Frost (Brock University)

Background: The Functional Movement Concepts Tool (FUMC) has been developed to characterize motor development and functional movement in children with autism spectrum disorder (ASD), using an unobtrusive, observational assessment method that looks at an individual's natural movements without requiring the anxiety-producing need to perform specific motor skills on demand.

Study Significance: Establishing the validity of the FUMC will allow its adoption for the purposes of tracking, reporting on and completing research with autistic individuals, and especially low functioning.

Purpose of the Study: The study will assess the validity of the FUMC by comparing observational movement data with motor skill performance scores from the Bruininks-Oseretsky Test of Motor Proficiency, Second Edition, Brief Form (BOT™-2 Brief Form). The BOT™-2 is a valid, widely used assessment of motor proficiency.

Proposed Method: Participants in a children's movement program will be observed using the FUMC and will perform the skills assessed by the BOT™-2 Brief Form. Two observers will be present at each session evaluating a participant in the movement context using the two different methods of evaluation for reliability purposes.

Parent Perceptions of the Physical Ability of Children with ASD: An Excerpt from a Mixed Methods Dissertation of a FMS Intervention

Andrew M. Colombo-Dougovito (University of Virginia)

Supervisor Name & Affiliation: Martin E. Block (University of Virginia)

Background: Children with autism spectrum disorder (ASD) have demonstrated delay in gross motor ability compared to peers (Fournier, et al., 2010; Liu, Hamilton, Davis, & ElGarhy, 2014). As a relatively new focus, few studies have provided an motor intervention focused on building fundamental motor skills (FMS) for children with ASD.

Study Significance: This research seeks to present a mode of intervention that will improve the motor abilities of children with ASD. As only one of three known studies to focus on this aspect of ASD, this study has great potential to help lay the foundation for future research on motor interventions for children with ASD.

Purpose of the Study: Utilizing dynamic systems theory (Newell, 1986), this dissertation will test the validity and efficacy of a motor intervention utilizing task modifications for children with ASD.

Proposed Method: A parallel, convergent mixed methods design will be utilized to capture the the quantitative results of the FMS intervention and the qualitative results of the parent interviews. By incorporating both methods concurrently, a greater understanding of the often unseen effects of an intervention can be captured (Creswell, 2015). In this presentation, the qualitative interview protocol will be discussed within the context of the larger study in order to gain feedback from the audience.

Validating Physical Fitness Assessments in Adolescents with Intellectual Disabilities

Kyla Collins (Texas Christian University)

Supervisor Name & Affiliation: Phil Esposito (Texas Christian University)

Background: Special Olympics Healthy Athletes is designed to assess and improve the health and fitness of individuals with intellectual disabilities. FUNfitness is one of seven Healthy Athletes disciplines designed to screen athletes for health concerns.

Study Significance: Adolescents with intellectual disabilities have shown lower levels of physical fitness than their typically developing peers and after the age of twelve, participation declines. Before fitness levels can be tested or progress measured it is important to ensure the methods of assessment are valid.

Purpose of the Study: Current methods are potentially not appropriate for adolescents. They are either not valid for use in younger populations or are too time consuming. The purpose of this study is to examine the validity of aerobic assessments and identify appropriate methods for assessing musculoskeletal fitness in adolescents with intellectual disabilities.

Proposed Method: The current method of assessing aerobic capacity is measuring oxygen saturation and heart rate following a two-minute step test and 20 meter PACER. These assessments will be cross validated using VO2max. Additionally the full FUNfitness musculoskeletal battery includes twelve items measuring flexibility, muscular strength, and muscular endurance. Using linear regression approximately six items will be selected based on their association with activities of daily living.

Relationship Among Physical Activity Level, Physical Activity Choice, and Social Participation of Preschoolers With/Without a Disability During Designated Large Gross Motor Time

Seok Heon Kang (Northern Illinois University)

Supervisor Name & Affiliation: So-Yeun Kim (Northern Illinois University), Laurie Zittel (Northern Illinois University)

Background: Physical activity has a great impact on the motor skill development and social participation. Actively participating in physical activity could be beneficial for preschoolers to engage in social behaviors whereas non-participation in physical activity has a negative effect on physical and social health. There is limited amount of research examining relationships among physical activity level, physical activity choice, and social participation of preschoolers with/without a disability.

Study Significance: Examining relationships among physical activity level, physical activity choice, and social participation of preschoolers can be valuable information for educators providing children with intervention/ instruction.

Purpose of the Study: Relationships among physical activity level, physical activity choice, and social participation of preschoolers with/without a disability during designated large gross motor time will be examined.

Proposed Method: A total of 60 participants with/without a disability, three to six years of age, will be recruited. Participant will be filmed during the designated large gross motor time. Using the Physical Activity Level Screening (Zittel, Kim, & Park, 2011), two raters will independently assess each participant's physical activity levels, physical activity choice, and social participation A standard multiple regression analysis will be used to examine relationships among

physical activity level as a dependent variable, and physical activity choice and social participation as independent variable.

Quartz Room B

Inclusive Physical Education Professional Development: Educative or Mis-Educative Experiences?

Hayley Morrison (University of Alberta)

Supervisor Name & Affiliation: Doug Gleddie (University of Alberta)

Background: Education for elementary teachers and educational assistants on inclusive physical education (IPE) is insufficient (Ko & Boswell, 2013). This presents barriers to implementing IPE programs for students with disabilities, particularly when there are current policy and enactment strategies in high demand for inclusion in schools (Thompson, Lyons, & Timmons, 2015).

Study Significance: Research on teachers and educational assistants experiences in professional development for IPE is absent in the literature and minimal professional development opportunities exist for practitioners to attend together.

Purpose of the Study: This research seeks to understand teachers and educational assistants experiences with PD on IPE and learning experiences of an IPE professional development implemented to support a community of practice.

Proposed Method: Using a Deweyan framework, education is understood as a continual process of becoming, active engagement of experience is critical, and reconstruction and the continuation of experiences to learn are essential (Dewey, 1963). This multiple-case study (Merriam, 1988) and hermeneutic inquiry involves interpreting data holistically to achieve a better understanding of the culture, language, and context of the phenomenon (Smith, 1991). Data will be collected from three different schools, with one teacher and one educational assistant as participants from each school. Data collection includes interviews, focus groups, reflexive journaling, participant observations, and

artifact collection. Analysis will involve back and forth recursive interpretation (hermeneutic circle) to identify emergent themes.

Exploring Physical Literacy for Individuals with Autism Spectrum Disorder: Interpretations of Community Physical Activity Program Leaders

Kyle Pushkarenko (University of Alberta)

Supervisor Name & Affiliation: Janice Causgrove Dunn (University of Alberta)

Background: Physical literacy (PL) has been embraced by educators and physical activity (PA) advocates worldwide. Despite this, various interpretations have surfaced and there is a lack of understanding about how PL is demonstrated and developed within the context of disability. As a result, the meaning of PL for persons with developmental impairments such as autism spectrum disorder (ASD) and individuals responsible for facilitating their PA experiences is unclear.

Study Significance: Through the acquisition of a context-specific understanding of PL with respect to disability, increased meaningfulness in the PA pursuits of children with ASD may be fostered through individualized PL programming, thus providing additional motivation to pursue future PA opportunities and an overall healthy lifestyle.

Purpose of the Study: The aim of this research is to investigate the meaning of the concept of PL within a disability context. Specifically, the research will investigate the value and meaning of PL perceived by individuals facilitating PA experiences for children with ASD in the community.

Proposed Method: Using an interpretive phenomenological analysis (IPA), semi-structured interviews with eight-to-ten community-based PA program leaders will ensue. Guided by the literature, questions will address the current understandings of PL, and the extent to which it can and should be utilized in PA programming for individuals with disability.

Why Didn't They Ask Me About My Disability?: Community Members' Views on Community Service Learning

Rebecca Marsh (University of Alberta)

Supervisor Name & Affiliation: Donna Goodwin (University of Alberta)

Background: Adapted physical activity (APA) has historically used disability-related Community Service Learning (CSL) or practicum placements, combined with APA courses to prepare students to create inclusive environments. CSL contexts should be based upon the principles of reciprocity, diversity and collaboration to create mutually beneficial relationships, however the community voice absent in the literature. Within disability contexts, people with impairment are rarely thought of as the experts in disability, even in learning environments. Resultantly, people with impairments endure negative ableistic asymmetries in power, risk, and knowledge which require hidden labour to manage.

Study Significance: By understanding the experiences of the disability community, we can better prepare students to be reflexive, ethical, and collaborative life-long learners in disability related settings.

Purpose of the Study: The purpose is to explore the experiences of the disability community when engaging with students. The research question is: How do people with impairments experience undergraduate community service learning settings in adapted physical activity?

Proposed Method: A qualitative interpretative phenomenological analysis research approach will be undertaken. Ten adults who are engaged with a CSL course will each complete semi-structured interviews. Focus groups will be conducted, and observational field notes will be documented. The data will be thematically analyzed and interpreted using the conceptual framework of Relational Ethics.

Integrated Dancers' Practices of Time - Initial Movement Themes

Kelsie Acton (University of Alberta)

Supervisor Name & Affiliation: Donna Goodwin (University of Alberta)

Background: Time is a basic element of dance. Timing, particularly the ability to reproduce complex, precise timing and to embody the extremes of fast and slow is a standard of excellence in Western concert dance. Dancers' bodies are temporally regulated in normative classes, rehearsals and performances to produce this standard of excellence. Integrated dance, which brings together people with and without impairment to train, create, rehearse and perform together, must contend with the normative temporal standards of Western dance.

Study Significance: Time is under-researched in integrated dance literature. Time appears in passing in both the literature on integrated dance training and on integrated dance rehearsal but is never deeply analyzed.

Purpose of the Study: I seek to understand how the normative temporal expectations of Western concert dance are taken up or resisted in the integrated dance rehearsal process. To that end, I ask, what dominant practices of danced time do professional integrated dancers embody and resist?

Proposed Method: The research question will be explored through arts-based research, an emerging method with APA. Five professional integrated dancers will create a dance performance ethnography over four months. Data will be collected through informal interviews, field notes, video and a focus group. Informal interviews will capture conversation and discussion that occurs in the course of rehearsal. Video-taping of rehearsals will record movement and discussion. Finally a focus group will take place following the completion of the rehearsal process to allow dancers to reflect on the process. Results will be

analyzed using compulsory able-bodiedness, which describes the ways that people, both with and without impairment, are compelled to perform and fail, to embody the idealized standards of able-bodiedness.

Amber Room A

The Parent-Child Relationship Between Physical Activity and Motor Skills

Emma DePasquale (University of Ontario Institute of Technology)

Supervisor Name & Affiliation: Meghann Lloyd (University of Ontario Institute of Technology)

Background: Fundamental motor skill (FMS) proficiency in children is related to higher physical activity (PA) levels. In addition, parental PA levels are associated with children's PA levels. However, information is lacking about how child FMS proficiency is related to parent FMS proficiency, and how parent FMS proficiency is related to PA in parents.

Study Significance: Theoretical understanding of family level predictors of PA that could inform future interventions.

Purpose of the Study: The purpose of this study is to investigate the relationship between parent and child PA and FMS levels.

Proposed Method: 50 children across the spectrum of motor skill proficiency, between the ages of 8-10 years of age, and their parents; will be assessed for FMS proficiency and PA levels. Child FMS will be assessed using the Test for Gross Motor Development-2, the Movement Assessment Battery for Children-2, and the Developmental Coordination Disorder Questionnaire. Parent FMS proficiency will be assessed using the Developmental Coordination Disorder Questionnaire for Adults. PA will be measured using pedometers for seven days. In addition, parents will complete the International Physical Activity Questionnaire; whereas, the children will complete the Physical Activity Questionnaire.

The Effects of Parental/Caregiver Health on Parent-Child Interactions in Children with Developmental Disabilities During Playtime

Byungmo Ku (Oregon State University)

Supervisor Name & Affiliation: Megan MacDonald (Oregon State University)

Background: Playtime with parents is an important factor that contributes to development of children with and without developmental disabilities. Active parent involvement with physical supports, positive affection, and appropriate responses during playtime is beneficial for the children's development, including the development of motor skills. Parent/caregivers of a child with a disability are at higher risk on being obese, and other negative health consequences, compared to parents/caregivers of typically developing children. Obesity is strongly related to physical inactivity and depression. In addition, some studies have found that parent's physical inactivity and depressive symptoms are adversely related to multiple domains of child development, including aspects of their physical developmental.

Study Significance: This study could provide possible different effects of parental health on parent-child interactions in children with developmental disabilities during playtime. This difference may impact health of children with developmental disabilities.

Purpose of the Study: The purpose of this study is to examine the effect of parental health on parent-child interactions of children with developmental disabilities during playtime and measure the association between parental health status and children's motor skills developments.

Proposed Method: We have already recruited approximately 200 parent/ child dyads and we have measures aspects of child health and child health. We will using regression models to measure how parental health status effects child health keeping other known factors as covariates.

Parental Self-Efficacy and Parenting Practices of Preschoolers with Intellectual and Developmental Disabilities in South Korea

Myung Ha Sur (Northern Illinois University)

Supervisor Name & Affiliation: So-Yeun Kim (Northern Illinois University), Laurie Zittel (Northern Illinois University)

Background: Parents are the most important influence to encourage physical development for their children. Parental self-efficacy and parenting practices can significantly affect children's physical development levels. However, there has been no study examining both parental self-efficacy and parenting practices of parents of preschoolers with intellectual and developmental disabilities (IDD) in South Korea.

Study Significance: Assessing levels of parental self-efficacy and parenting practices can provide valuable information to develop effective parental education programs to promote motor skill development of their children with IDD.

Purpose of the Study: This study will examine parental self-efficacy and parenting practices of parents, in the domain of physical development, of children (3-6 years) with IDD in South Korea. Additionally, this study will examine which demographic factors are significantly related to parental self-efficacy and parenting practices.

Proposed Method: A total of 200 parents who have a child with IDD in South Korea will be recruited. The Preschool Parent Confidence Questionnaire (Coleman, 2010) and items regarding supportive parenting practices of the Parenting SOS (Vaughn, Hales, & Ward, 2013) will be used. A Pearson correlation coefficient will be calculated to examine relationships between parental self-efficacy and parenting practice. Two standard multiple regression

analyses will be separately utilized to identify significant demographic factors on parental self-efficacy and parenting practice.

Prism Room

Validation of FitBit Flex for Individual with Multiple Sclerosis

Willie Leung (Oregon State University), Jaehun Jung (Oregon State University)

Supervisor Name & Affiliation: JoonKoo Yun (Oregon State University)

Background: Due to unique conditions of individuals with multiple sclerosis (MS), it is advised that they engage in light physical activity (PA; Dalgas et al., 2008). This recommendation is due to high levels of body-heat during exercise may lead to increase in intensity and frequency of symptoms associate with MS (Guthrie, 1951). Because of alter metabolic process of individuals with MS (Mähler et al., 2012), intensity estimation of FitBit Flex (FBF) need to be examined.

Study Significance: Commercially available telemetry devices such as FBF can be used to monitor PA intensity and motivate people with MS to engage in PA. However, inaccurate estimation of PA intensity may increase unintended consequences. Therefore, it is crucial to examine the accuracy of PA intensity from FBF.

Purpose of the Study: The purpose of this study is validating FBF among individuals with MS.

Proposed Method: Twenty-three participants with MS will wear FBF on right wrist and use metabolic cart (MC) to monitor MET levels. Participants will walk on treadmill and arm bike on arm ergometer for 8-minute each at different speeds. MET levels between minute-3 to minute-6 of each trial will be averaged to determine PA intensity from FBF and MC. Categorial variables of PA intensity from FBF and MC will be compare.

Effect of Acute Aerobic Exercise on Cerebral Blood Flow and Cognitive function in Individuals with Down Syndrome

Sang Ouk Wee, MS. (University of Illinois at Chicago)

Supervisor Name & Affiliation: Bo Fernhall (University of Illinois)

Background: Cognitive impairment is very common for individuals with DS due to the genomic mutation. In addition, further cognitive decline became one of the most serious health issue with development of dementia and Alzheimer's disease among the aging individuals with DS. Aerobic exercise has been proved to elicit beneficial effect on cognitive function with increased cerebral perfusion in non-DS population. However, whether a single bout of aerobic exercise can improve cerebral blood flow and cognitive function in individuals with DS is not studied yet.

Purpose of the study: To examine the effects of acute bout of treadmill walking on cerebral blood flow and cognitive function, specifically reaction time and processing ability in individuals with DS.

Proposed method: A total of 40 individuals with and without DS, age between 18 to 40, will be recruited. Study procedure includes proper familiarization visit, treadmill maximal exercise testing (VO2peak), cognitive function testing and cerebral blood flow measurement before and after one bout of moderate intensity treadmill aerobic exercise (60% HRpeak).

Study significance: Our study will be providing very important knowledge and information regarding about beneficial effect of single bout of moderate intensity aerobic exercise on cerebral perfusion and cognitive function. If our hypothesis, single bout of aerobic exercise improves cognitive function and cerebral perfusion in individuals with DS, is proven to be the true, this results will provide very important information in exercise prescription in individuals

with DS to improve not only their cognitive function but also improve their quality of life.

The Impact of Exercise on Heart Rate Variability Among Special Olympics Athletes

Laura St. John (University of Victoria)

Supervisor Name & Affiliation: Viviene Temple (University of Victoria), Lynneth Stuart-Hill (University of Victoria)

Background: Heart rate variability (HRV), the change in the time intervals between adjacent heartbeats, is directly related to the body's interdependent regulatory systems of the autonomic nervous system and ultimately, their efficiency and health. It has been shown in the general population that a more variable heart rate is indicative of better health status, that engaging in physical activity can improve HRV, and that exercise prescribed using HRV augments fitness development.

Study Significance: To determine whether HRV can be used as a marker of health status and to prescribe exercise for Special Olympics athletes, HRV profiles at rest and in response to exercise need to be determined

Purpose of the Study: To establish HRV profiles in Special Olympics athletes with and without Down syndrome.

Proposed Method: Adult Special Olympics athletes (n=40) will be recruited in BC. Participants will wear a Polar Team-2 heart rate monitor at rest, during a 6-minute walk test, and during passive recovery. HRV data will be analyzed using the Kubios HRV analysis software. Descriptive statistics will be computed on the high frequency (HF) component of HRV which reflects the magnitude of fluctuation in the cardiac parasympathetic input, the low frequency (LF) component of HRV which is a reflection of sympathetic activity, and the LF:HF ratio.

Thursday, September 22nd, 10:55 - 11:55 a.m.

Concurrent Research Sessions

Amber Room A

Improving Inclusive Practices: An Observational Approach Grounded in Students' Experiences

Lauren Lieberman (The College at Brockport), Michelle Grenier (University of New Hampshire), Ali Brian (University of South Carolina)

Primary issue(s) to be presented and discussed: Membership in a physical education class is dependent on many factors, including social engagement, learning outcomes, and necessary supports (Sherrill, 2004). For many students with disabilities, general physical education is not a positive experience. Students face difficulties interacting with peers, marginalization, and noninteraction from teachers (Blinde & McCallister, 1998; Goodwin & Watkinson, 2000; Haegele & Sutherland, 2015). They can be socially isolated despite their inclusion in PE (Place & Hodge, 2001). While students with disabilities may need support to access the curriculum, it can be a barrier for developing relationships with peers (Goodwin, 2001). Today, more than thirty years after the Education of All Children Handicapped Act (PL 94–142) was enacted, teachers continue to struggle with knowledge of disability and coherent strategies that address student need (Block & Obrusnikova, 2007; Grenier, 2007; Slee, 2001). An ongoing struggle within inclusive education is the need to broaden our understanding of meaningful practices and to consider the natural supports that promote positive learning experiences for students with disabilities in general physical education.

Session significance: At this time in our field there is no instrument that can measure and provide feedback on the efforts, intentions and practices of

teachers when working with students across a range of abilities. Because the social construction of ability in PE inscribes bodies with implied performative meaning, notions of ability are inscribed within the disabled body. The result includes lack of access to the curriculum and less than optimal learning. As a result, the instrument has sought sensitivity to the variables that marginalize students with disabilities. The variables in the scale are framed in a positive way in order to assess the presence or absence of the variable. However, the "scale" in and of itself has the potential to circumvent what may have been unpleasant experiences through a reliance on central conditions that support inclusivity. For example; did the child arrive to class with their peers? Is there a variety of equipment to meet all needs in the class? When possible does the child have a peer as a partner as opposed to the paraeducator? Do all children stay until the end of class most of the time? In the end, the instrument can prove useful for defining teacher efforts and areas of need not previously considered.

Relation to conference theme: The development and validation of the inclusion rating scale is the result of interdisciplinary work between individuals who come from diverse backgrounds and epistemological frameworks. The resounding theme among the investigators aligns with the qualitative research emanating from students with disabilities. Justification for the instrument integrates knowledge of best practice with standards associated with scientific rigor. Defining the terms by which the instrument will be used required on-going and sustained communication that challenged assumptions on what was necessary to include in the instrument, the manner in which measurement will be addressed, and the explicit use of the instrument (i.e.) would it be used to evaluate or inform?

Description of session: The building session will begin with a history and development of the instrument grounded in the qualitative experiences of the children's' voices. Our personal histories will reflect our own bias towards

providing an avenue through which teaching practices can be articulated and identified. In order to secure a position in the world of adapted physical activity, the validation of the instrument required interdisciplinary methods for rigor.

In presenting the instrument, attendees will have the opportunity to provide feedback on:

+ the integrity of the instrument

+ the reasons for developing the instrument

+ the means by which “validation” occurred

+ utilization of the instrument

Reference: Haegele, J.A., & Sutherland, S. (2015). Perspectives of students with disabilities toward physical education: A qualitative inquiry review. Quest, 67(3), 255-273.

Vignettes of Children With Special Education Needs Profiled with Differing Physical Activity Intensity and levels of Weight Status-Perceived Fitness

Geoffrey Meek (Bowling Green State University), Vandita Prasad (Toledo Public Schools)

Introduction: The application of BMI as a grouping variable in studies of physical activity attitudes and participation have reported indifferent results (Ickes & Sharma, 2012). As an alternative BMI has been combined with fitness measures (Mitchell, Moore, Bibeau, & Rudasill, 2012) and this paper applied the intersection of two composite variables: exercise-intensity physical activity behaviors; and weight status-perceived fitness to identify nine profiles of adolescent children. On examining responses to physical activity and activity of daily living questions of children within each profile a more refined picture of physical activity attitudes and participation was established. Through the development of vignettes this paper examines profiled responses of children who have special educational needs.

Method: From an inner-city high school population (n = 229) who were profiled a total of 13 children were identified with special educational needs. A sequential mixed-methods approach was applied. The quantitative data determined the assignment of the sub-sample into the nine profiles. The qualitative data was examined via a cross-case analysis and identified issue relevant meanings which were developed into vignettes. The vignettes applied Meek & Spencer's (2011) 3 IFs approach: illustrate facts; illuminate facticities; inspire fiction. This took us beyond facts and developed critically informed storied accounts.

Results or Findings: Four vignettes representing 10 of 13 children are presented that emerged from cross-case analysis of the data. The vignettes: breathless; track star; big but active; and fast hands identify the interactions

and complexities of having special needs, different profiles of physical activity, and levels of weight status-perceived fitness.

Conclusions or Implications: By generating critically storied accounts of the profiled children we attempted to illustrate and illuminate the complexity of choosing and participating in physical activity for children with special needs. The vignettes highlight the need for more varied and profile specific physical activity programming.

Standardization of a Czech version of self-efficacy scale for physical education majors towards children with disabilities

Ladislav Baloun (Palacký University), Martin Kudláček (Palacký University), Jana Sklenaříková (Palacký University), Alena Migdauová (Palacký University)

Introduction: Students with disabilities are currently supported to participate in general physical education (PE) in Czech Republic. Teachers of PE play a key role in inclusion. Questionnaire SE-PETE-D is based on Bandura's self-efficacy model. SE-PETE-D measures self-efficacy of PE teacher education majors' toward including students with intellectual disabilities (ID), physical disabilities (PD) and visual impairment (VI) in PE frameworks. The main purpose of this study was to standardize SE-PETE-D in Czech language.

Method: Standardization of the questionnaire was done in several steps. The first sample of participants included 252 (101 females, 151 males) PE students from five Czech universities. We conducted Cronbach's alpha method for assessment of reliability and confirmatory factor analysis (CFA) for assessment of validity.

Results or Findings: The coefficient of Cronbach's alpha reached good values (α for PD scale = .87, α for VI scale = .90, α for ID scale = .76). CFA performed for each subscale confirmed two factors in ID scale (F1 peers' instruction, F2 staying on task), three factors (F1 specific adaptations, F2 peers' instruction, F3 safety) in PD scale and two factors (F1 specific adaptations, F2 peers' instruction) in VI scale. CFA confirmed factor structure of Block, Hutzler, Barak, and Klavina (2013) results. The chi-square was significant in all models except for ID ($p = .44$), other goodness of fit measures demonstrated acceptable model fit.

Conclusions or Implications: The particular subscales with the items confirmed exhibit significant construct validity evidence that they can be used to explore

the impact of different programs on self-efficacy in PE teacher education students. We continued in the process of validation of SE-PETE-D-CZ in the Czech setting and currently we have done data collection from the second sample of participants. The results ‘comparison of first and second data collections will be also presented.

Acknowledgement of Research Support (Optional): IGA-FTK-2015-007 Physical activity and lifestyle as the determinants of health and quality of life of persons with disabilities

Amber Room B

Hidden Labour: Participation of Youth in Recreation

Donna Goodwin (University of Alberta), Rebecca Marsh (University of Alberta), Kassi Boyd (University of Alberta), Maegan Ciesielski (University of Alberta), Amanda Ebert (University of Alberta)

Introduction: Dialogue on the moral obligation for labour sharing within inclusive recreation contexts is needed. Unpacking life stories of youth with neurological impairments provide powerful windows into the tensions and synergies of community programs, thereby bringing to light the interrelated moral entities of professional practice and youth narratives of community participation. Understanding stories and counter-stories, where teller and listener come together to retell and relive stories, invites new interpretations of the embodied experiences of youth. The purpose of this study was to understand the hidden labour experiences of youth with neurological impairments who participated in inclusive community recreation programs.

Method: A qualitative interpretative phenomenological analysis research approach was undertaken. Nine youth (ages 14-24) with neurological impairments who participated in community recreation programs completed audio recorded semi-structured interviews and focus group interviews. The interview data and field notes were thematically analyzed and interpreted using relational ethics.

Results or Findings: The shared experiences of hidden labour included (a) pushing through social vulnerabilities - to located and connect with enriching physical activity communities, (b) embracing embodied knowledge – to shed stigma and manage personal frustrations, and (c) physical, social, and emotional problem solving - to establish limits of autonomy while embracing the reassurance of interdependence. The fullness of personhood involved the

complex and effortful interaction of attention to self and self-knowledge while maintaining perspective on the social and political actions of others.

Conclusions or Implications: The findings bring focus to the hidden labour expended by youth to be socially and culturally engaged in recreational pursuits. The hidden labour counteracts contexts that are, at times, devoid of engagement with the embodied experiences of youth. Further research into the moral axioms and standards of professional practice may further our understanding of the negotiations with self and others required to create contexts that reflect autonomy of self, connectedness to others through interdependence, and relational respect.

Acknowledgement of Research Support (Optional): Craig H. Neilsen Foundation

The Impact of Inclusion: Exploring the Impact of Participating in an Inclusive Physical Activity Program for Youth with and without Disabilities

A. Boross-Harmer (University of Toronto), F. V. Wright (Holland Bloorview Kids Rehabilitation Hospital), J. Leake (Holland Bloorview Kids Rehabilitation Hospital), K. P. Arbour-Nicitopoulos (Holland Bloorview Kids Rehabilitation Hospital)

Introduction: Despite the many benefits of physical activity (PA), participation rates remain low among youth of all abilities. Inclusive PA programming has been proposed as one method to counter this growing problem. However, few studies have explored how PA levels and self-perceptions towards PA within this population have changed as a result of inclusive programming.

Method: We examined the impact of participating in a 16-week, group-based inclusive PA program (Igniting Fitness Possibilities) for youth with and without disabilities at a community-based facility within the Greater Toronto Area. Accelerometers were worn for one week prior to the start of the program; PA-related self-efficacy and motivation were also assessed using the Physical Activity Self-Efficacy Scale (PASES) and the BREQ-3 respectively during week two of the program. At 16 weeks, each baseline measure was re-evaluated, and program-specific friendship development was examined using the 5-point Likert scale Peer Motivational Climate Youth Sport Questionnaire (Peer-MCYSQ).

Results or Findings: Four participants (three with disabilities), Mage=14.5 years ± 2.52) took part in this study. Daily average moderate-to-vigorous PA levels improved from 60.90 ± 26.25 mins/day to 72.60 ± 44.03 mins/day (d= 0.32). Self-determined motivation towards PA also improved between baseline and post-program evaluations (pre = 25 ± 23.68 vs. post = 35.75 ± 40.0, d = 0.33). Self-efficacy scores also improved from pre (M = 47 ± 23) to post (M = 69 ± 7,

d = 1.29). Participants reported positive, supportive evaluations of their friendships (M = 3.63 ± 0.81), and no peer conflict throughout the program (M = 0).

Conclusions or Implications: These findings provide insight of how PA levels, attitudes, self-efficacy, and friendship development may improve as a result of inclusive programming, providing support for the implementation of such programming.

Acknowledgement of Research Support (Optional): This research is supported through a Connaught New Researcher grant awarded to K. Arbour-Nicitopoulos.

Transitioning from Separate to Community Physical Activity Contexts for Youth with Impairments: The Parental Experience

Bobbi-Jo Atchison (University of Alberta), Donna Goodwin (University of Alberta)

Introduction: Moving from separate physical activity contexts to community physical activity contexts for youth with impairments can be a difficult transition for all involved. While research on the barriers for youth undergoing these transitions exists, very little attention has focused on the role of parents and their experiences as their children undergo these transitions. The purpose of this study is to (a) explore the experiences of parents as they anticipate and prepare for the transition of their children from one setting to another, (b) understand the strategies families use to address the transition, and (c) gain insights into the supports that are important to them in addressing the challenge of change of settings.

Method: An interpretive phenomenological case study approach was used to guide this research study. The researcher conducted two semi-structured interviews with eight parents of youth with impairments between the ages of 12-19 who were undergoing the transition from separate physical activity programs to community physical activity contexts.

Results or Findings: Using the Schlossberg Model of Transition as the conceptual framework, the analysis revealed four themes that captured the experiences of parents as their families moved out of a structured, resource rich, separate environment, moved into a non-structured, unpredictable community environment and moved through the transition process: (a) my child may be ready, but I'm not, (b) fear of parental stigmatization, (c) playing by their rules, and (d) reframing our thinking.

Conclusions or Implications: Study results indicated a dynamic and powerful interaction between parent's experiences and societies influences. Parent's stories revealed a picture of acquiescence and the role symbolic violence can play in parent's lives. This research can serve as a resource for clinical and community practice and the development of resources used to guide professional practice in efforts to create more seamless and positive transitions to inclusive community programs.

Acknowledgement of Research Support (Optional): The Steadward Centre for Personal & Physical Achievement, University of Alberta

Prism Room

Why We Move: Social Mobility Behaviors of Children With and Without Disabilities Across Childcare Contexts

Samantha M. Ross (Oregon State University), Samuel W. Logan (Oregon State University), Michele A. Catena (Oregon State University), Melynda Schreiber (University of Utah), Heather A. Feldner (University of Illinois at Chicago), Megan MacDonald (Oregon State University), James C. Galloway (University of Delaware)

Introduction: Early learning and development of young children is facilitated by the co-occurrence of self-directed locomotion and social interaction, termed ‘social mobility’. Social mobility is a product of dynamic child-environment interactions and thus likely to vary across childcare contexts (e.g., classroom, gymnasium and playground). The purpose of the present study is to examine differences in children’s social mobility (1) across contexts by age, and (2) between children with and without disabilities.

Method: A substantial gap exists in engagement of social mobility between children with and without disabilities. There is an increase in magnitude and variability of social mobility around age 3 that suggests the gap between children with and without disabilities will continue to widen. Implications and recommendations for early intervention are discussed.

Results or Findings: A substantial gap exists in engagement of social mobility between children with and without disabilities. There is an increase in magnitude and variability of social mobility around age 3 that suggests the gap between children with and without disabilities will continue to widen. Implications and recommendations for early intervention are discussed.

Conclusions or Implications: A substantial gap exists in engagement of social mobility between children with and without disabilities. There is an increase in

magnitude and variability of social mobility around age 3 that suggests the gap between children with and without disabilities will continue to widen. Implications and recommendations for early intervention are discussed.

Acknowledgment of Research Support (Optional): This study was funded by the UNIDEL Foundation.

Tumbling Together: Improving Self-Regulation Skills in Preschool Aged Children with Developmental Delays

Amelie Fournier (Children's Hospital of Eastern Ontario Research Institute), Cecile Loiselle (Brockville General Hospital), Jean Chamberlain (Brockville General Hospital), Patricia E. Longmuir (Children's Hospital of Eastern Ontario Research Institute/University of Ottawa)

Introduction: Children with limited self-regulation skills find it very difficult to participate in group activities, limiting their involvement in child care, therapy, early education, recreation and community settings. Tumbling Together (TT), an 8 to 10-week program of speech-language and occupational therapy through gymnastic activities, was designed to build self-regulation skills among preschool children. This study evaluated the impact of Tumbling Together on three important self-regulation skills: responding to a command, acting appropriately when signaled, and waiting for a turn.

Method: Evaluations were completed during the first two and final two classes for each Tumbling Together session. Response to direction was the number of jumps required to stop on the trampoline. Direct observation recorded the ability to sustain lining-up and turn-taking behaviours as required. Parent perceptions of their child's ability to participate in group programs were reported on the Social Skills Checklist. Chi-square analyses evaluated whether the children's ability to wait (Yes/No) or response to an action signal (line-up) changed after program participation (baseline/post-program). Paired t-tests evaluated changes in command response (# of jumps to stop) and social skills scores.

Results or Findings: Evaluations during the first and final weeks of Tumbling Together found significant improvements in all three skills among 27 children (3 (11%) female), 3.1 to 4.8 years of age. The number of jumps required to respond to a stop command decreased by 38% (Pre: 2.1 ± 0.9; Post: 1.3 ± 0.4;

p<.001). The proportion of children able to line up independently in response to a signal increased from 26% to 89% (p<.001), and the ability to wait for a turn when required increased from 7% to 80% (p<.001).

Conclusions or Implications: Results suggest that Tumbling Together improves important self-regulation skills among preschool-aged children with complex communication needs, developmental delays, and physical and self-regulation challenges. Future research should examine whether the self-regulation skills acquired through Tumbling Together can be applied in other structured or unstructured programs or settings.

Advocating Movement for Young Children: Using Data!

Geoff Broadhead (Kent State University)

Introduction: Fundamental motor skill development is widely assumed to be important for young children. Personal anecdotes attest to this idea, but lack scientific substance. What does being 'important' mean? What is its importance compared with other parameters of development? The study addresses such questions.

Method: Appropriate test instrumentation exists for children aged 2 1/2 to 5 1/2 years. The test is Developmental Indicators for the Assessment of Learning (DIAL), (Mardell & Goldenberg, 1975; Mardell-Czudnowski & Goldenberg, 1983, 1998). which measures movement and non-movement skills. Data (n=610) were obtained from the "Child Find" phase of a US State's Special Education Plan, written to comply with federal legislative mandates. The importance of movement was compared with the extant motor development literature; with the pre-school Special Education literature; and with the author-guidelines for interpreting the results (both emphasize language development), and it compared the relative importance of gross motor skills, fine motor skills, concepts skills, and communication skills: The four Components of DIAL.

Results or Findings: Results of nine stepwise multivariate discriminant function analyses (DFAs) showed that both discriminant functions were statistically significant ($p < 0.02$), for the whole sample, and for each sub-group by age (3, 4, 5 yrs), sex (girls, boys), and skin color (white, non-white). A lesser number than the original 28 items were identified as the best discriminators among the sub-groups. Using percentages of the variance, the greater the number of significant discriminators for each Component, the greater the relative importance of each Component. Thus, the importance of movement compared with non-movement skills was revealed. However, neither the guidelines

outlined by Mardell & Goldenberg (1975), nor the emphases of the pre-school literature, each stressing the importance of language, were upheld.

Conclusions or Implications: First; pre-school curricula should include appropriate and planned movement experiences. Second; evaluation of the research questions with other age groups is warranted.

Thursday, September 22nd, 2:00 - 3:20 p.m.
Concurrent Research Sessions

Quartz Room B

Incidence of Obesity in a Large Representative Sample of Youth With Developmental Disabilities

Melissa M. Pangelinan (Auburn University), Keith R. Lohse (Auburn University), Andrea Patrick (iCan Shine), Lisa Ruby (iCan Shine)

Introduction: Individuals with developmental disabilities are at increased likelihood for poor health-related fitness and increased incidence of obesity. However, no recent studies have examined the US incidence of obesity in those with developmental disabilities and how these trends may differ from those reported for typically developing individuals. To address this knowledge gap, we examined the incidence of obesity in a large, representative sample of youth with developmental disabilities compared with published data for typically-developing individuals.

Method: Data from the 2014 iCan Shine bicycle training program were obtained from 108 camps across the US. The current sample included a total of 2,090 individuals ages 6 – 20 years with developmental disabilities (ASD N=968; CP N=107; Developmental Delay N=75, Down Syndrome N=656; Learning Disabilities N=124; Neuromuscular N=160). BMI Percentile was obtained from the CDC estimates for males and females from 0 to 20 years. The percentage of individuals classified as obese were computed. Linear mixed effects models were used to examine the effects of geographic region, disability status, and age on BMI percentile. We also computed the degree of discrepancy between the published rates of obesity for our sample and those published for typically-developing individuals.

Results or Findings: After accounting for age and geographical region, disability status significantly accounted for variability in BMI percentile ($p < 0.001$). ASD, Down Syndrome, and Neuromuscular disabilities were all associated with increased BMI percentile. Compared with the prevalence rates of obesity for typically developing individuals, those with developmental disabilities were on average 9.17% greater.

Conclusions or Implications: These data represent youth with disabilities seeking adapted recreation and thus the rates of obesity may be attenuated compared with the broader population. Thus, not only must we employ interventions to promote skill development, but we must also quantify the long-term impact of these interventions on altering the trajectory of obesity in those with disabilities.

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Obesity in Down syndrome: BMI or DXA?

Andrew Pitchford (University of Michigan), Chelsea Adkins (University of Michigan), Dale A. Ulrich (University of Michigan)

Introduction: Obesity represents a health disparity among youth with Down syndrome (DS), but our understanding of this health condition is limited by body mass index (BMI; kg/m2). Due to unique characteristics of the DS phenotype (i.e. short stature), BMI may be an inappropriate measure of body composition. The purpose of this study is to examine differences in obesity using metrics of BMI and dual-energy x-ray absorptiometry (DXA). We also examine the association between body composition and health behaviors (physical activity and diet) between adolescents with and without Down syndrome.

Method: The study consisted of 22 adolescents with DS (14.96 years, 3.64 Tanner stage, 36% female) and 17 typically developing (TD) adolescents (15.08 years, 3.67 Tanner stage, 59% female). We measured 1) height and weight for BMI, 2) body fat percentage from a DXA scan, 3) moderate-to-vigorous physical activity (MVPA) from a week of triaxial accelerometry, and 4) dietary intake (kcals / lean kg) from a proxy report with the Youth/Adolescent Food Frequency Questionnaire. Analyses included 1) Pearson's Chi-square test for differences in obesity proportions between BMI and DXA, and 2) associations (β) through linear regression.

Results or Findings: The proportion of adolescents with DS classified as overweight or obese was significantly higher using BMI (73%) than DXA (57%; $X2(1)=7.87$, $p=.005$). Linear regression ($R2=.400$) identified significant predictors of body fat percentage including DS ($\beta=.340$, $p=.027$), age ($\beta=.521$, $p=.031$), and pubertal stage ($\beta=-.580$, $p=.005$). Neither MVPA ($\beta=-.271$, $p=.076$) nor dietary intake ($\beta=.136$, $p=.430$) were statistically significant factors.

Conclusions or Implications: BMI may overestimate the prevalence of obesity in DS, but the proportion of adolescents with elevated body fat from DXA measurement remains high. The influence of MVPA on body fat percentage may be limited by low activity among the sample. This is clearly a population in need of direct intervention to address health disparities in obesity.

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Obesity paradox in individuals with intellectual disability?

Jooyeon Jin (University of Wisconsin-La Crosse), Stamatis Agiovlasitis (Mississippi State University), Joonkoo Yun (Oregon State University)

Introduction: Body mass index (BMI) above or below the normal range is associated with adverse health outcomes in the general population (U.S. Department of Health and Human Services, 1998). However, recent studies show a more complicated picture, such as overweight being significantly associated with lower mortality rates (Flegal et al., 2013). For individuals with intellectual disabilities (ID), the same controversy might be speculated, but this possibility has not been explored. The purpose of this study was to investigate the obesity paradox in adults with ID conjunction with BMI.

Method: National Core Indicator data containing 10,946 adults with ID (M=43.8 years, range 18-96 years; male 58%) were used. BMI was categorized as: underweight (<18.5), normal weight (18.5-24.9), overweight (25-29.9), obesity I (30-34.9), obesity II (35-39.9) and obesity III (>40). PA was binary (no or yes for regular moderate PA participation), mobility with three categories (without aids, with aids independently and non-ambulatory) and ID levels with four categories (mild, moderate, severe and profound). Relationships were analyzed using ordered logistic regressions for four ordinal categories of general health: excellent, very good, fairly good and poor.

Results or Findings: Participants in underweight (ß=.53, p<.001), obesity I (ß=. 14, p<.05), obesity II (ß=.36, p<.001), and obesity III (ß=.92, p<.001) were significantly less healthy than participants in normal weight, but overweight participants were significantly healthier than the normal weight participants (ß= -.11, p<.05), controlling for age. Additionally, PA (ß= -.57, p<.001), mobility (aids: ß=.64, p<.001; non-ambulatory: ß=1.05, p<.001) and ID levels (moderate: ß=.11, p<.05; severe: ß=.25, p<.001; profound: ß=.29, p<.001) were significant predictors of general health, accounting for BMI and age.

Conclusions or Implications: Study findings indicate that the obesity paradox also applies to adults with ID and there are several factors that influence their health. Future studies are warranted to further explore the complicated relationship of BMI and health outcomes in individuals with ID.

Cortisol Response to Exercise and Adiposity in Adolescents With and Without Down Syndrome

Andrew Pitchford (University of Michigan), Chelsea Adkins (University of Michigan), Dale A. Ulrich (University of Michigan)

Introduction: Lower peak aerobic capacity and heart rate (HR) have been repeatedly demonstrated in individuals with Down syndrome (DS). A blunted cortisol response to exercise has also been shown in DS. Given the obesogenic effect of cortisol and the high prevalence obesity in people with DS, this relationship may be substantive. Thus, the purpose of this study was to examine the effect of exercise on cortisol in adolescents with DS and typical development (TD) and the association between cortisol response and excess fat mass.

Method: Participants completed a DXA scan and protocol including baseline rest, treadmill exercise (70% predicted max HR), and seated recovery. HR and indirect calorimetry were collected during each period followed by a saliva sample analyzed for cortisol concentration (ug/dL). A total of 26 adolescents (12 with DS and 14 with TD, 50% female, Mage=15.35 years) completed the protocol. Repeated-measures ANOVA examined the between- and within-group variance for physiological variables across the protocol. One-way ANOVA examined differences in cortisol output between participants with elevated body fat percentage in each group.

Results or Findings: The analysis revealed significant multivariate effects between groups ($p<.001$) and within the group by time interaction ($p<.001$). Univariate group by time effects of HR, VCO2, and VO2 were statistically significant ($p<.01$), but not for cortisol concentration ($p=.342$) or respiratory exchange ratio ($p=.212$). Cortisol output during exercise was significantly higher in participants with elevated body fat percentage in the DS group ($p=.043$), but not the TD group ($p=.228$).

Conclusions or Implications: As expected, adolescents with DS had different aerobic responses to the exercise protocol. Changes in cortisol were not significantly different between disability groups, but the finding of increased cortisol response in adolescents with DS who have elevated fat mass is novel. Given the high prevalence of obesity in DS, researchers should include cortisol in future studies examining physiological and endocrine factors during exercise.

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Amber Room A

Motor Skill Interventions for Children with DCD that Include Psychosocial, Emotional, and Behavioural Outcomes: A Scoping Review

Chantelle Zimmer (University of Alberta), Daniel Gregg (University of Alberta), Janice Causgrove Dunn (University of Alberta)

Introduction: Children with developmental coordination disorder (DCD) exhibit psychosocial, emotional, and behavioural difficulties as a result of their poor coordination and skill performance. However, many researchers and practitioners assume that motor skill interventions that lead to improvements in the motor domain will also lead to improvements in non-motor domains. Because of this, motor skill interventions focus predominantly on motor outcomes, with little attention paid to concurrent non-motor outcomes. The aim of this scoping review was to examine motor skill interventions that provided empirical data on the psychosocial, emotional, or behavioural outcomes in children with DCD.

Method: A 5-stage methodological framework was used to guide data collection and analysis (Arksey & O'Maley, 2005; Levac, Colquhoun, & O'Brien, 2011). Scholarly literature published between January 1996 and February 2016 was searched in nine electronic databases, which resulted in 18 motor skill interventions that assessed both motor and non-motor outcomes. Two researchers independently extracted the data of interest from the 18 articles, including: (a) the type of motor skill intervention used; (b) the specific psychosocial, emotional, and behavioural outcomes measured; (c) the methods used to assess non-motor outcomes; and (d) the results or findings with respect to the non-motor outcomes.

Results or Findings: The majority of motor skill interventions were categorized as task-oriented (n = 9) or traditional physical or occupational therapy (n = 8),

and focused on psychosocial concerns in children with DCD. Qualitative (n = 1), mixed (n = 5), and quantitative (n = 12) measures were employed to assess non-motor outcomes. The results of most studies were not significant, but anecdotal evidence from parents, teachers, and children suggested improvements in non-motor domains occurred.

Conclusions or Implications: The findings of this review indicate that non-motor outcomes are not incorporated into the intervention design with the same rigor as motor outcomes, and that researchers need to be more transparent in their methods to accurately determine the efficacy of these interventions.

Physical Activity Programming for Children with Intellectual and Developmental Disabilities: It's More Than Just Participation

K.L. Staples (University of Regina), S. Lautenslager (University of Regina), Kyla Collins (Texas Christian University), A. Federink (University of Regina), K. McLeod (University of Regina), A. Bellerive (University of Alberta)

Introduction: Movement skills play a critical role in development - the performance of movement skills by school-aged children with intellectual and developmental disabilities (IDD) is impaired compared to their same aged peers. These differences become more obvious with increasing age and children with IDD fall further behind -- these increasing differences may reflect the limited opportunities that children with IDD have to practice and improve. The focus of this research is on improving the performance of fundamental movement skills among 30 children with IDD, aged 7 to 12 years, who participated in a structured physical activity program.

Method: The Test of Gross Motor Development – 3rd ed. was used to examine the performance of 6 locomotor and 7 object control skills. Each skill is broken down into 3 to 5 performance criteria for a total of 46 and 54 criteria for the locomotor and object control subtests, respectively. Movement skills were assessed using the TGMD-3 before and after participation in a 10-week physical activity program. To explore how movement skills are improved and maintained, 15 of these children participated in 2 sessions and 9 children participated in 3 sessions.

Results or Findings: Following participation, the raw scores on the locomotor and object control subtests improved from 21.86 to 25.68 and from 22.64 to 27.71, respectively. The results of paired samples t-tests demonstrated that participation in 10-weeks of structured physical activity programming does lead to significantly improved performance of locomotor ($p < .01$) and object control

($p < .01$) skills. Repeated measures analyses will be used to examine improvements following participation in subsequent 10-week sessions.

Conclusions or Implications: This presentation highlights the importance of physical activity and sport-based programs in helping children with IDD to develop the requisite skills to participate successfully in a variety of activities and promote lifelong participation in physical activity.

Acknowledgement of Research Support (Optional): Special Olympics Canada

Effects of Special Olympics Canada's Active Start and FUNdamentals Programs at Improving Motor Skills: Results from British Columbia, Saskatchewan, Ontario and Nova Scotia

Meghann Lloyd (University of Ontario Institute of Technology), Lindsay Guest (SickKids Hospital)

Introduction: Children with intellectual and developmental disabilities (IDD) often have delayed and/or atypical motor skills. Poor motor skills can adversely impact various aspects of the lives of children with IDD including school, sport participation, vocational work, community and physical activity participation. Special Olympics Canada has developed 2 programs within the Long Term Athlete Development Model to target the development of fundamental motor skills of young children with IDD: Active Start (ages 2-6) and FUNdamentals (ages 7-12). The purpose of this study was to investigate whether children who participate in these 12 week programs in Ontario, British Columbia, Nova Scotia, and Saskatchewan improve their fundamental motor skills.

Method: There were a total of 56 participants at study onset (n= 22 female), only 36 were retained at follow up (n= 13 female). Each participant demonstrate 4 skills from the Test of Gross Motor Development-2, including 2 locomotor skills (running and hopping) and 2 object control skills (overhand throwing and kicking). All skills were videotaped by trained instructors and researchers scored the motor skills from the recordings for consistency.

Results or Findings: As a group, there was a 58% increase in locomotor skill scores for Active Start Participants and a 62% change in score for object control skills. The FUNdamentals participants improved their locomotor skill scores by 37% and their object control skills by 26%. Data also indicate that, particularly for the younger participants, at the baseline testing the motor skills were significantly delayed for age; further justifying the need for early motor skill interventions for children with IDD.

Conclusions or Implications: The preliminary results indicate participants in Active Start and FUNdamentals programs run by Special Olympics in Canada made improvements in 4 fundamental motor skills. Future research should include larger samples and include more motor skills; however, these results provide evidence that current programming is effective at improving motor skills in this population.

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A Universally Designed Motor Skill Intervention for Children With and Without Disabilities

Sally Taunton (University of South Carolina), Ali Brian (University of South Carolina), Larissa True (State University of New York, Cortland)

Introduction: Children with fundamental motor skills (FMS) delays are often less physically active than typically developing peers. FMS delays are often exacerbated for children with disabilities. Providing motor skill intervention (MSI) to children with FMS delays (otherwise typically developed) are effective. It is unknown if a universally designed MSI (UDMSI) will produce similar results. The purpose of this study is to examine the effects of a UDMSI on the FMS of children with and without disabilities in an inclusive setting.

Method: Participants, ages 3-5, (N=67; females=43%; Mage=4.6, SD=.51 ; disability=42%) were recruited from an early childhood center in the southern United States. Participants with disabilities included: intellectual disabilities, emotional disturbances, severe Attention Deficit/Hyperactivity Disorder, other health impairments, and children prescreened for Autism Spectrum Disorders. No child possessed a physical impairment. Participants were randomly assigned to UDMSI (n=40; disability=50%) or control groups (n=27; disability=30%). All participants were pre/post tested on the Test of Gross Motor Development-2. UDMSI participants received 30 minutes of UDMSI (two days) and free play (three days) per week. Control participants received only free play (5 days per week).

Results or Findings: A one-way, three group (UDMSI-disability, UDMSI-no disability, control) ANOVA revealed no significant differences between groups for FMS at the pretest $F=.763$, $p=.471$, $\eta 2=.02$. An ANOVA with repeated measures showed a significant main effect for time $F=164.89$, $p<.001$, $\eta 2=.89$, group $F=6.610$, $p=.007$, $\eta 2=.42$, and group x time interaction $F=38.52$, $p<.001$, $\eta 2=.67$. Tukey post hoc analyses confirmed FMS of UDMSI-no disability

(M=61.70, SD=2.46) was significantly higher (p=.013) than UDMSI-disability (M=51.50, SD=.2.46). FMS for all UDMSI was significantly higher (p<.001) than control participants (M=34.89, SD=2.12).

Conclusions or Implications: UDMSI children significantly improved FMS in six weeks whereas control children did not change. Future research should extend UDMSI dosage to examine whether participants with disabilities catch up to peers without disabilities. Implications for early childhood centers are noted.

Amber Room B

The Effects of the System of Least to Most Prompts on the Acquisition of Muscle Strengthening Exercises by Individuals with Intellectual Disabilities: Preliminary Findings

Iva Obrusnikova (University of Delaware), Albert Cavalier (University of Delaware)

Introduction: Although the importance of regular PA of adults with intellectual disabilities (ID) has been recognized, knowledge about effective instructional strategies to appropriately address the unique needs of this population is lacking (Stanish et al., 2006). One of the effective strategies used in postsecondary settings has been the system of least to most prompts (SLMP). In the SLMP, the instructor progresses through a prompting hierarchy from the least to the most intrusive prompt necessary to obtain a correct performance (Demchak, 1990). The SLMP has recently been researched in combination with video prompting (ViP), which allows viewing of each step of a task before imitating that step. The SLMP has not been systematically studied to promote performance of exercise tasks in individuals with ID. The purpose of the research study was to assess the effectiveness of the SLMP including ViP on the performance of two muscle-strengthening exercises of young adults with ID.

Method: This study utilized a multiple-baseline-across-participants single-subject design with a convenience sample of three 20-year-old adults with ID (WASI-II FSIQs = 42-47). The dependent measures were the percentage of exercise steps completed without prompting and the percentages of the different prompts used in each session.

Results or Findings: The staggered data demonstrated all participants improved their performance after the introduction of SLMP in a laboratory

setting (final performance ranged 85-100%), which was maintained one and two weeks after the SLMPS withdrawal and generalized into a YMCA fitness room. Using the percentage of non-overlapping data (Scruggs et al., 1987), the treatment was considered very effective for all participants. Most steps only required ViP to improve the performance. Social validity data confirmed the social importance of the treatment.

Conclusions or Implications: This study provided preliminary data on the effectiveness of the SLMP including ViP on the acquisition of two muscle-strengthening exercises in three young adults with ID.

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Assisted Cycling Therapy Improves Self-Efficacy in Adolescents with Down Syndrome

Shannon D. R. Ringenbach, Simon D. Holzapfel, Kellie C. Wallace

Introduction: Self-efficacy is a strong predictor of engagement in physical activity. Improving physical activity in adolescents with DS can also improve in cognitive and motor functioning. This study examines the effectiveness of two modes of exercise on self-efficacy (SE) in adolescents with Down syndrome (DS).

Method: Thirty-nine participants were randomly divided into a voluntary cycling group (VC) (i.e., self-selected cadence), an assisted cycling therapy group (ACT) (i.e., at least 30% faster than self-selected cadence accomplished by a motor), or a no cycling group (NC). In each cycling intervention the participant completed 30 minute cycling sessions, three times per week for a total of eight weeks. The Physical Activity and Self Efficacy Survey was administered prior to cycling (i.e., pretest) and after the eight week intervention (i.e., post-test).

Results or Findings: The results were consistent with the hypothesis that self-efficacy would improve after ACT, however there was no improvement after the VC condition as hypothesized. It was also hypothesized that exercise perception would improve following the ACT intervention; exercise perception showed a trend of improvement after ACT, but the data did not reach significance.

Conclusions or Implications: In conclusion, eight weeks of moderate ACT exercise demonstrated a significant trend for improved self-efficacy in adolescents with DS. This is important for increasing physical activity and enhancing activities of daily living which will improve quality of life in adolescents with DS.

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Water N' Weights: Designing an Adaptive Fitness and Conditioning Program for Youth with Disabilities

Andra Lenius (Brock University/Niagara Children's Centre), Leigh Goring (Niagara Children's Centre)

Introduction: The need for individualized strength and conditioning programming for Children with Special Needs in the Niagara Region continues to grow. To address this growing need, an interdisciplinary team of Physiotherapy, Recreation/Aquatic Therapy, and Kinesiology was created at the Niagara Children's Centre (NCC), to develop an adaptive fitness and conditioning program for children 8 years of age and older with various considerations. Participants had to be referred into the program by their Occupational Therapist or Physiotherapist, and had to be current clients of the NCC.

Method: Each participant underwent a pre-test with the Physiotherapist (PT) using specific assessment areas of the BOT-2 test to determine baselines scores for balance (static and dynamic), strength (static and dynamic), upper-limb coordination, running speed and agility. The information of assessments was then provided to the Kinesiologist/Recreation Therapist to create an adaptive fitness and conditioning program that is both developmentally and physically appropriate for all participants. Participants' diagnoses ranged from Double Hemiplegia Spastic Cerebral Palsy, congenital heart defects, to Down Syndrome. Each session consisted of a 45 minute block in the "Water" (NCC Pool) and 45 minutes in the Physiotherapy Gym, completing the "Weights" block. The focus of the "water" block was to increase cardiovascular endurance, and to provide an environment where participants would be able to focus more on agility, balance, and upper limb coordination in a safe and least-restrictive environment. The "Weights" block of the session followed a station-based pedagogy, with the focus on muscular strength and endurance. Each

station was supervised by the PT, Kinesiologist, or trained program volunteers. Data sets included were the pre- and post- BOT-2 test, structured observations, as well as parent feedback.

Results or Findings: The BOT-2 was an unsuccessful measure for all the children. Every exercise/test had to be modified to be completed. Each participant displayed increased improvement in the stations, in both correct form and completion of the exercise, as well as endurance of each activity.

Conclusions or Implications: Successful adaptive fitness and conditioning programming for children with specific movement needs and considerations is needed, and can be created by breaking down more complex skills into easier tasks, and progressing appropriately to achieve fitness goals. There is a need for a more inclusive and adaptive pre-test, to allow for specific improvements to be documented and analyzed.

Acknowledgement of Research Support (Optional): Thank you to the Ontario Power Generation (OPG) for their support of the Water n' Weights Program.

The Effects of Long-term Adapted Aquatics on Swimming in Children with Disabilities

Louisa A.M. Summers (Eastern Kentucky University)

Introduction: The purpose of this study was to determine the effects of three semesters of adapted aquatics on swimming levels in children with disabilities.

Method: Participants: The participants included fifteen children, aged 4-15 years. There were 11 children with autism and four children who self-reported other disabilities including learning and intellectual disability. Procedures: A single subject study design was used to determine the effects of long term adapted aquatics. The American Red Cross Swimming levels (American Red Cross, 2005) were used to assess improvement in aquatics. Each child participated in nine sessions of 45 minutes of adapted aquatics per semester for three semesters. Each semester the child was paired with a new senior level university student. At the beginning of each semester, the aquatics director would pre and post-test each child. Intra-rater reliability testing was performed using an American Red Cross expert instructor and the aquatics director (n=5). Intra-rater reliability showed a moderate correlation (r = .74).

Results or Findings: First semester, level one swimmer's averaged 4 of 22 new skills; level two swimmers learned on average five of 22 new skills. During the second semester, five of the eight children in level 2 moved to level 3. Then, during the third semester, five of the same eight children moved from level 3 to level 4.

Conclusions or Implications: First semester, level one swimmer's averaged 4 skills and level two swimmers learned five. After the second semester, children move up one swim level each semester thereafter. Continuing the adapted aquatics program improved swimming regardless of the change in student

assigned. However, the level 1 swimmers who stopped coming and/or, dropped out and then came back, did not progress in the same manner.

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Prism Room

Perceptions of Motor Competence for Children With and Without Visual Impairments

Ali Brian (University of South Carolina), Justin A. Haegele (Old Dominion University), Laura Bostick (Louisiana Tech University), Lauren Lieberman (State University of New York's College at Brockport), Danielle Nesbitt (University of South Carolina), David Stodden (University of South Carolina), Sally Taunton (University of South Carolina)

Introduction: Perception of motor competence (PMC) is an underlying mechanism driving physical activity (PA) behaviors. Lower levels of PMC negatively affect PA increasing the likelihood for obesity and hypokinetic diseases. While it is known that children with visual impairments (VI) often demonstrate lower levels of PA and motor skill competence than sighted peers, little is known about PMC. The purpose of this study is to examine PMC for children ages 3-13 with and without visual impairments (VI).

Method: Participants, ages 3-13 (N=35; Girls=20, 57%; Mage=8.06, SD=2.97), were recruited from a center for the blind (n=15), early childhood center (n=10), or an elementary school (n=10) all within the southern United States. Participants completed the Test of Perceived Motor Competence for Children with Visual Impairments (Brian et al., in press; n=7; VI ages 3-7), the Pictorial Scales for Perceived Competence and Social Acceptance (Harter & Pike, 1984; n=10; Sighted ages 3-7), or the Self Perception Profile for Children (Harter, 2012; n=18; sighted=10,VI=8; ages 8-13).

Results or Findings: A two age band (3-7, 8-13) by two group (VI or sighted) ANOVA revealed a significant main effect for vision ($p<.001$; $\eta 2=.41$) and age ($p<.003$; $\eta 2=.28$). There were no significant interactions. PMC for sighted children (M=3.25, SD=.149) was higher than PMC for children with VI (M=2.25,

SD=.173) regardless of age. Children ages 8-13 demonstrated lower mean PMC scores than children ages 3-7 for children with VI (-.584) as well as for sighted children (-.592).

Conclusions or Implications: Children with VI demonstrate lower PMC than sighted peers, which may decrease as children age. Given the importance of PMC in regard to PA, it is critical that PMC is developed during the early years. Future research can empirically explore associations between PMC, motor skill competence, and PA among children with VI and examine the effectiveness of motor skill interventions on the PMC for these populations.

Analyzing the Theoretical Underpinnings of the Paralympic School Day Awareness Program

Cathy McKay (James Madison University), Martin E. Block (University of Virginia)

Introduction: The importance of theoretically oriented research in adapted physical education is well documented. This research study addressed Allport's contact theory as the theoretical basis of the Paralympic School Day (PSD) awareness program, using a newly created fidelity of implementation instrument (Fidelity Criteria) to measure a single construct (contact theory), seeking to control and explain the manner in which PSD satisfied the four components of contact theory. This research is significant, as operationalizing the theoretical components of contact theory incorporates a theoretical basis of comparison to which the PSD curriculum is faithful.

Method: Participants were 145 sixth grade students who took part in the PSD curriculum. A chi-square test was used on each of the four Fidelity Criteria to determine if the intervention effect satisfied the four corresponding components of contact theory. A confirmatory factor analysis (CFA) determined construct validity of the Fidelity Criteria. Reliability analyses were also conducted.

Results or Findings: Results indicated that the PSD intervention supported the four theoretical components of contact theory, with statistically significant differences in student responses across all four components ($p < .001$; $w \geq .52$). In addition, results indicated that the Fidelity Criteria had strong test-retest reliability with internal consistency that was strong across time points ($r = .829$; $p \leq .001$). Results also indicated that the four components of the Fidelity Criteria instrument measured a single construct (one component significant at the $p \leq .01$ level, three components significant at the $p \leq .001$ level), thus indicating strong construct validity.

Conclusions or Implications: The Fidelity Criteria instrument was created to provide a basis of comparison to which the intervention is faithful. This research offers specific insight into controlling or explaining practice, as the theoretical basis suggests relationships between observable phenomena. Important next steps include replicating the research with attention to the generalizability, reliability and validity; and considering if modifications are needed.

Cultural Awareness: Chinese Parents' Perception of Adapted Physical Education

ZáNean McClain (California State University), Dwan Bridges (California State University), Elizabeth Bridges (Striving Toward Excellent Pursuits, Inc.), Seo Hee Lee (Adapted Physical Education Consultant, Columbus, OH)

Introduction: Although disabilities are not ethnicity or racial specific, it is known that cultural differences do influence how a disability is perceived (Daudji et al., 2010). This study aims to describe perceptions of adapted physical education among Chinese immigrant parents of children with disabilities in a western state that is considered to be both multicultural and urban, and to explore how parent perceptions parallel the services that may be available to their children's direct services.

Method: A qualitative research design was employed. Inclusion criteria consisted of the participant being a Chinese immigrant, having a child documented with a disability, and receiving direct services as part of his/her Individualized Education Program, including Adapted Physical Education. Semi-structured interviews were conducted, and field notes were gathered, on fifteen parents who have immigrated to the USA from China.

Results or Findings: Themes were identified that directly related to the parents' cultural traditional beliefs, barriers, and primary goal setting for their children. The analysis of the semi-structured interviews and coded responses led to these following barriers: lack of understanding of cultural differences; lack of knowledge of adapted physical education curriculum; and lack of understanding of their parental rights.

Conclusions or Implications: This research showed the importance of Chinese immigrant parent perceptions and how perceived barriers can actually become learning opportunities with the knowledge, value, and belief in and of expert

professionals within such a community. The recommendations were to form collaborative partnerships in schools, parents should serve as an advocate for their children, school personnel need to understand the Asian culture, and school districts should provide parental training (e.g., policies and practices of the Individualized Education Plan). Further research should be conducted in determining goals to overcome perceived barriers within this culture in order for their children to have a better quality of life.

43 Years Later, Youth with Disabilities are Still on the Sidelines

Kerri A. Vanderbom (UAB/Lakeshore Research Collaborative), Byron Lai, (UAB/Lakeshore Research Collaborative), Jennifer Taylor (Western Oregon University)

Primary issue(s) to be presented and discussed: PE and athletics in schools are an important place where youth can meet their recommended daily physical activity (PA) and begin to adopt lifelong PA behavior. However, students with disabilities are less likely to be active participants in these settings. Consequently, physical inactivity rates are 4.5 times higher than their non-disabled peers. The purpose of this session is to discuss strategies to improve inclusive physical education (PE) and athletic opportunities in schools. We will base our discussion of inclusive PE/athletics around a study we conducted to gain an understanding of students with mobility disabilities (SwMD) experiences in PE. Three major themes identified from the study were: inclusion as a social justice issue, positive experiences and overcoming barriers in PE/athletics.

Session significance: Many barriers to participation in PE/athletics exist for SwMD. While there is research on teacher's experiences in inclusive PE/athletics, there is little insight to the experiences of SwMD. As we know from participatory action research and knowledge translation, to successfully address the issue, SwMD need to be included in the solution-building process. The perspectives of SwMD will help academics better prepare future and current teachers and practitioners with strategies on inclusion and how to address barriers in the PE/athletics settings.

Relation to conference theme: PE and inclusive athletics have been required by the law for over 40 years. It is time to readdress the issue and examine how SwMD are currently being included. Based on the results of the study, students are advocating for an interdisciplinary approach involving themselves, family,

peers, school officials, therapists, staff conducting programs such as safe routes to school, community recreation staff (e.g., afterschool staff, parks & recreation staff), coaches and others who have an active role in the SwMD PE/ athletic participation.

Description of session: A. Background (from literature): i. The health/ psychosocial outcomes of SwMD

In relation to PE/athletics ii. Current state of inclusive PE/athletics

B. Qualitative study with SwMD

i. Purpose & Methods

ii. Results: Metacodes, themes, and strategies to improve inclusive PE identified by SwMD

C. Discussion on how to address the needs of SwMD in PE/athletics and who need to be involved

Reference: A: U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs, Creating Equal Opportunities for Children and Youth with Disabilities to Participate in Physical Education and Extracurricular Athletics, Washington, D.C., 2011.

B: Law M, Petrenchik T, King G, Hurley P. (2007).Perceived environmental barriers to recreational, community, and school participation for children and youth with physical disabilities. Arch Phys Med Rehabil., 88(12):1636-42.

Thursday, September 22nd, 3:30 - 4:15 p.m.
Concurrent Building Sessions

Quartz Room A

Critical Discourse About Social Justice and Adapted Physical Activity

William J. Harvey (McGill University), Shawn Wilkinson (Concordia University)

Primary issue(s) to be presented and discussed: Social justice through a critical pedagogy lens is an important, but understudied, new area in adapted physical activity (APA). We suggest that APA has been inherently emersed in advocacy efforts for people with disabilities but it has not questioned the deeper social issues that may effect participation in physical activity, health and well-being. Issues of intersectionality and a range of diversity issues do not seem to be included in the broader APA discourse, perhaps to the detriment of the very people that it claims to study and serve.

Session significance: This session is important to disability research and APA practice because we suggest that the field has become paralyzed by (a) over-emphasis on politically-correct language, (b) over-reliance on the construct of normality and (c) marginalization of adapted/inclusive physical education. We intend to question the assumptions that may underlie these three key points.

Relation to conference theme: This session will question some of the paradigmatic assumptions of APA by (a) briefly discussing the issue of politically correct language in research, (b) challenging the notion that normality is a contemporary assumption to hold in research and practice within social constructions of people with disabilities themselves and (c) suggesting there is a lack of coherence in APA to best study and serve people with disabilities across the lifespan.

Description of session:

Social justice and critical pedagogy will be defined, with social, political and cultural links made to people with disabilities in physical activity and community contexts

The influences of intersectionality and diversity on APA will be identified through concrete examples for children and adults with mental health problems, with specific references made to the recovery model in community mental health

Questions about the paradigm assumptions will be woven throughout the presentation to disrupt the current APA discourse and attempt to seek new research questions and potential solutions in this exciting research area.

Reference: Harvey, W.J. (2016). Looking over our shoulders: Looking over our shoulders: Disability in Physical Education from a critical perspective. Chapter 6 in D.B. Robinson & L. Randall (Eds.), Social Justice in Physical Education: Critical Reflections and Pedagogies for Change. Toronto, Canada: Canadian Scholars' Press Inc.

Quartz Room B

Interventions to Promote Physical Activity for Individuals With an Intellectual Disability: Gaps and Recommendations for Research

Viviene Temple (University of Victoria), Georgia C. Frey (Indiana University), Heidi I. Stanish (University of Massachusetts, Boston)

Primary issue(s) to be presented and discussed: There is a pressing need to develop and test physical activity interventions for children and adults with intellectual disabilities, and to document the process and outcomes of these interventions. Small short-term increases in activity levels have been demonstrated, but 'multi-pronged' and sustained approaches are needed to achieve a more pervasive increase in physical activity. The purpose of this building session is to briefly review the current research on physical activity interventions for children and adults with intellectual disabilities and discuss ways this research agenda can be advanced to have greater impact on the health and well-being of this underserved population segment.

Session significance: The session is significant to disability research methodology and training in that (1) physical activity intervention research for people with intellectual disabilities has made little progress in the past 20 years; (2) there are no intervention best practices for this population; and (3) it is unclear if interventions are impacting the health of this population segment. As such, there is a need to examine the strengths and limitations of existing research, and to identify strategies to better direct this research agenda.

Relation to conference theme: This building session is well aligned with the conference theme of revisiting research assumptions because the moderators will address (1) the need for expanding the physical activity intervention and intellectual disability research agenda; and (2) strategies that scientists can employ to expand and advance this research topic.

Description of session: The session will be organized as follows:

1. Summary of physical activity intervention research for youth with intellectual disabilities (Frey).

2. Summary of physical activity intervention research for adults with intellectual disabilities (Temple).

3. Strategies for advancing the physical activity and intellectual disability research agenda (Stanish).

4. Audience discussion.

Reference: Temple VA, Frey GC, Stanish H. Interventions to promote physical activity for adults with intellectual disabilities. Salud Publica de Mexico (in press).

Frey GC, Temple VA, Stanish H. Interventions to promote physical activity for youth with intellectual disabilities: A systematic review. Salud Publica de Mexico (in press).

Amber Room A

Making Your Passion Work for Research, Service, and Teaching: Exploring Camp Abilities after 20 Years Now and in the Future

Lauren Lieberman (The College at Brockport), Justin Haegele (Old Dominion University)

Primary issue(s) to be presented and discussed: Many new higher education faculty in the field of adapted physical activity struggle to juggle the demands of the responsibilities related to teaching, service, and research. In some cases they experience success in one area separate from the others. Often times one or two areas fall short of the need for attaining tenure at their university. Being able to take one specific disability, sport, or theme and promote all areas of teaching, research, and service at a level to attain tenure is an art. It has to be done with forethought, care and intentional and sustained practice.

Session significance: The field of Adapted Physical Activity is small with even fewer professionals obtaining terminal degrees and university positions. In many cases, there are faculty position openings and not enough candidates to fill these important positions. These professionals are the future for children with disabilities as they teach future teachers. We need to train and retain as many as possible. It is imperative that when a new faculty person lands a position in higher education that they maintain the delicate balance between teaching, research, and service in order to retain the position. This balance may be taught in part in university professional preparation leadership programs, but the concept of wrapping them into one focused and sustained area is relatively new.

Relation to conference theme: This presentation ties in very well with the conference theme “Revisiting our Research Assumptions 20 Years On: The Role of Interdisciplinarity”. It is assumed that research should inform practice,

and in this case because research, teaching, and service are all tied together they continually inform each other. In addition, in order to truly do justice to the practice of combining the three areas the nature of what we practice must be continually interdisciplinary.

The NAFAPA conference has consistently catered to graduate and doctoral students. This presentation is perfect for this audience as it shares a case study of how the combination of teaching, research and service can indeed further a career and make a marked difference in the field.

Description of session: * This presentation will start out by discussing the various requirements for tenure and promotion at research and non-research based universities.

* Then the presenter will share the case study of Camp Abilities over the past 20 years and the research, teaching and service nature of this specific program for the various professors who have a Camp Abilities on their campuses. Currently there are eight universities that have Camp Abilities programs on their campuses around the world with a variety of combinations of teaching, research, and service. The various strategies of combining teaching, research, and service (including grant writing) will be discussed and shared with specific examples.

* More examples will follow with time for the participants to share how they also combine teaching and research, or service and research, etc.

Reference: Furtado, O., & Lieberman, L.J. (in press). The outcomes of running a sport camp for children and youth with visual impairments on faculty members' teaching, research, and service activities: A case study. Sport in Society

Prism Room

Interdisciplinary Student Services: An Innovative Approach to Student Placements

Aimee MacGillivray (University of Alberta), Kari Medd (Glenrose Rehabilitation Hospital)

Primary issue(s) to be presented and discussed: *Identify and understand the components of professional competency within the realm of a collaborative interdisciplinary student practicum model

*Demonstrate how the role of an interdisciplinary student placement advances health care professions by putting IP learning into practice

*Identify the benefits to clients and program capacity with the implementation of such a program

Session significance: This kind of program has been shown to better prepare students as practitioners in rehabilitation. There is some evidence that this model promotes improved IP practice within staff.

Relation to conference theme: This is an innovative program that prepares students to become better practitioners as they have a good understanding of other disciplines, and therefore provide better client treatment. It models true interprofessional/interdisciplinary practice.

Description of session: *At the Glenrose Rehabilitation Hospital, students from RecT, OT, PT & SLP have the opportunity to develop the clinical competencies as required by their discipline as well as the competencies identified within the interdisciplinary model.

*Clinical Educators from each discipline work together to provide learning opportunities for students to develop the skills and knowledge required for engaging in interdisciplinary practice.

*The session will provide knowledge related to the learning objectives of the program, student and patient experiences and benefits to the program area offering the placement

Reference: Vanderzalm, J., et al. Fostering Interprofessional Learning in a Rehabilitation Setting: Development of an Interprofessional Clinical Learning Unit. Rehabilitation Nursing 2013, 38, 178-185.

Thursday, September 22nd, 7:00 - 8:30 p.m.
Poster Session

Exploring the 'Felt Sense' of Alignment and Sensation-Perception Connection in an Isometric and Movement Education Based Exercise Program for an Adult Participant with Cerebral Palsy

Maureen Connolly (Brock University), Kate Leman (Brock University), Angela Jackson (Brock University)

Introduction: Cerebral Palsy remains one of the most challenging embodied complexities for participants wishing to engage in lifespan physical activity and especially activity that contributes to functionality and quality of movement in everyday life. As people with Cerebral Palsy age, they not only manage the cumulative, compensatory joint, muscle and pain effects of the bodies they live, they also manage the reduction in services of therapeutic and activity based professionals.

Method: We undertook a study with a 39 year old female with Cerebral Palsy who wished to return to an exercise program of basic movement after a year away from regular exercise following a medical procedure initiated by her specialists to mitigate spasticity. Following establishing baselines on the participant's range of motion, postural alignment and stability as well as interview based descriptions of her sense of how her body moved and 'felt', we implemented a 24 week program involving assisted movement patterns, isometric and flexibility activities supplemented by audio and video recordings of the movement sessions and participant and student assistant journals.

Results or Findings: Blending traditional record keeping and phenomenologically oriented lived experience descriptions of the felt sense of one's moving body allowed for parallel tracking of improvements in movement

and a more refined awareness of basic body movement. Results include a) improvements in head alignment, torso stability, and shoulder positioning, b) strategies that assistants with minimal training can use that will assist in the exercise program, c) participant's refined awareness of weight transfer, head alignment and shoulder positioning and autonomy in directing her support.

Conclusions or Implications: With attentive, individualized programming, a woman with Cerebral Palsy achieved meaningful, relevant improvements in her functionality and felt sense of her own body. Our strategies may have applicability for other participants seeking functional exercise programs as well as peers/friends who may wish to assist them.

See Me For Who I Am

Melissa Bird (University of Alberta), Caitlin Wheeler (The Steadward Centre for Personal & Physical Achievement, University of Alberta), Amanda Ebert (University of Alberta), Bobbi Jo Atchison (The Steadward Centre for Personal & Physical Achievement, University of Alberta), Donna Goodwin (University of Alberta)

Introduction: The study aimed to examine exercise related images of disability embodiment posted on a specific social media site. Although few scholars have focused on the meaning of disability imagery, some have described it as inspiration porn and cripspiration, when used to either inspire non-disabled viewers or put their own worries into perspective. The research objectives were to: (a) understand how disability images are used and misused in the representation of the disability community, (b) generate, narrate, and understand alternate disability produced (scripted) and directed (artistic control) photographic images, and (c) bring disability authority to a change in the way in which disability images are created and utilized in an exercise context, as a model for other disability centers and policy makers.

Method: Using photovoice, individual and group work was combined with photography, providing six co-researchers experiencing disability with an opportunity to reflect on and record their daily lives. Each co-researcher produced (wrote scripts) and directed (artistic control), alongside an experienced photographer, four self-narrated exercise related portraits. Through photovoice, members of the disability community [re]negotiated socially imposed perceptions of the political arrangements of their bodies

Results or Findings: Using the theoretical framework of compulsory ablebodiedness, the co-researchers rejected cultural ideals of client, normate, cyborg, hero, or supercrip. Their images were reflective of the tensions surrounding their internal embodied knowledge of self, the external self viewed

through the camera lens, and public representations of their embodied experiences of exercise.

Conclusions or Implications: The study balanced research power relationships by fore-fronting disability wisdom as a legitimate epistemological form of knowledge creation. Further, by controlling the manner in which their lives were documented, the politics of disability representation were challenged. Finally, the study resulted in the creation of a dignified space for future discussions of disability representation.

Acknowledgement of Research Support (Optional): Roger S. Smith Undergraduate Research Award, UofA; The Steadward Centre for Personal & Physical Achievement, UofA

Physical Activity Promotion Among Adults with an Intellectual Disability: What Do We Know?

Cathy MacDonald (State University of New York, Cortland), Paula L. Bush, (McGill University)

Introduction: Evidence suggests individuals with an intellectual disability (ID) do not engage in sufficient amounts of physical activity (PA) to reap health benefits. Finding ways to increase PA levels is a priority for practitioners and researchers. The purpose of this study was to review PA promotion interventions among individuals with ID and provide recommendations for research and practice.

Method: This study is part of a broader mixed studies systematic mixed studies review examining physical activity promotion among adults with a disability. Focusing on adults (18-65 years) with ID, the authors completed a mapping review to describe what is known about promoting PA to people with ID, and subsequently, develop a set of recommendations. Data pertaining to study design and results were extracted together with authors' recommendations.

Results or Findings: A comprehensive search of the peer reviewed literature yielded 4220 records. The authors independently identified (n=491) and selected (n=41) eligible studies. Among these, 5 focused on persons with ID. Studies used quantitative (n=3) or mixed methods (n=2). Most interventions ran 1-2 times per week over 3-4 months. Only 2/5 were theory based, using social cognitive theory. The two educational interventions noted increases in PA knowledge, but no associated increase in PA was observed. In some studies, social support was noted as a positive influence on PA level, with one describing a beneficial mentoring program. While none of the studies observed significant increases in PA, some did note the feasibility of providing health promotion interventions to engage this population. In fact, some authors

suggested research in ID could learn from health promotion theories often used in interventions for the general population.

Conclusions or Implications: Framing results around health promotion theories, the authors will present recommendations for researchers and practitioners seeking to increase the level of PA of adults with ID.

Recreation Professionals Perceptions of Delivering Inclusive Services

K. Nielsen (University of Ontario Institute of Technology), Jennifer Leo (Abilities Centre)

Introduction: Individuals with disabilities are less physically active, and are presented with fewer opportunities to participate in community-based sport and physical activity programs. Though fields such as special education and therapeutic recreation present a growing knowledge base in the area, little is known about the professionals delivering inclusive recreation services. The purpose of this study was to develop insight into the perceptions of recreation professionals regarding their ability to deliver inclusive recreation services.

Method: A single cross-sectional survey was administered in person and online with 21 professionals (6 males, 15 females) employed at a recreation centre in the Durham Region. The majority of participants were aged 21 to 25 years (57%) and had completed either a University Degree (n=9) or College Diploma (n=12). Participants were asked to rank their level of confidence to deliver inclusive recreation services according to a list of 25 competencies.

Results or Findings: Overall, recreation professionals revealed the greatest degree of confidence within interpersonal categories (e.g., having positive attitudes towards individuals with disabilities) and reported to feel less confident in areas related to theoretical knowledge and research trends. All respondents indicated that additional training and/or certifications would increase confidence in their abilities to deliver inclusive recreation.

Conclusions or Implications: Findings from this study shed new light on the requirements of recreation professionals to deliver inclusive services and highlight the need for additional training and support. Future research will examine the training needs and interests of current professionals and will explore how to address these gaps within post-secondary settings.

Learning to Teach Students with Disabilities: The Impact of Situated Learning Approach in APE Course

Jihoun An (East Carolina University)

Introduction: Teaching students with disabilities (SWD) in general physical education (GPE) is a trend in today's public schools in U.S. It results in pre-service physical educators being trained as inclusion specialist. Physical education teacher education (PETE) programs in U.S. traditionally offer one course of adapted physical education (APE) to prepare them to be competent practitioner teaching SWD, but many physical educators still retain the feelings of incompetency to include SWD in GPE. Therefore, this pilot study explored the impact of situated learning instructional approach used in APE course as a way of promoting inclusion practices from the perspectives of pre-service physical educators.

Method: Using a qualitative case study inquiry, the pre-service physical educators' learning (N=17) was explored. A sequential situated learning experiences were provided: understanding of disability, disability simulations, media presentation and analysis, panel discussion (athletes with disabilities, children with disabilities and their parents), service-learning experiences (weekly, 10 weeks), critical reflection, and designing inclusive practices. Multiple data were gathered: profile, interviews, participant observation, field notes, visual artifacts, and coursework samples. Research rigor was built by multiple coders, peer debriefing, prolonged engagement, thick description, and triangulation (Patton, 2002).

Results or Findings: Four themes were emerged from an inductive thematic analysis: Teaching knowledge learned, shared, and practiced, Barriers recognized and overcame, paying more attention to ability than disability, and Hands-on is real learning. Pre-service physical educators reflected that situated learning experiences supported their ongoing engagement in learning

process. They also considered that various opportunities in the course allowed them to boost their competency of teaching SWD.

Conclusions or Implications: Pre-service teachers showed limited experiences of teaching SWD prior to the APE course. It is recommended that learning experiences in the course should be authentic and situated; thereby, they can make sense of social practices, build their identities and roles, and discover resources required in certain situations (e.g., GPE).

Special Olympics Movement in the Czech Republic: 25 year of Existence

Julie Wittmannova

Introduction: The Special Olympics Czech is national organization of Special Olympics International in the Czech Republic. This body is celebrating 25 year of work in the field of sport opportunities for athletes with intellectual disabilities. The presentation is introducing the organization, main activities, field of research.

Method: Information about opportunities for athletes with intellectual disabilities, actions, research possibilities of Special Olympics in the Czech Republic.

Results or Findings: State of Art of Special Olympics in the Czech Republic, problems of popularity and propagation of sport for persons with intellectual disabilities.

Conclusions or Implications: Sport opportunities for athletes competing in Special Olympics help promote sport in this specific disability group, increases quality of life of the participants and their awareness to healthy life style.

Acknowledgement of Research Support (Optional): PA and life style as determinants of health and quality of life of persons with disability (IGA_FTK_2015_007).

A Systematic Review of the Prevalence of Overweight and Obesity in Adults with Intellectual Disabilities

Meghann Lloyd (University of Ontario Institue of Technology), Michael Crozier (State University of New York College Cortland), John Foley (University of Victoria), Viviene Temple (University of Victoria)

Introduction: Individuals with intellectual disabilities (ID) are often reported to have a higher than normal BMI. This is clinically significant because high BMI is associated with increased risk of numerous health conditions. However, the prevalence of overweight and obesity has not been systematically documented within current literature for individuals with ID. The purpose of this systematic review was to assess the status of the literature with respect to the prevalence of overweight and obesity (BMI > 25) in individuals with ID (excluding Prader-Willi Syndrome).

Method: The databases Medline, Pro-quest Nursing, PsycINFO, PubMed, and Sport Discuss were searched for relevant articles using a search strategy developed in cooperation with a health sciences librarian from the University of Ontario Institute of Technology (UOIT). The search produced an initial sum of 834 potential articles. After removing duplicates (n=128). The remaining 706 articles were screened for relevance using predetermined selection criteria (e.g. directly measured height and weight, not a weight loss study). The screening was completed independently by three separate reviewers. After appropriate agreement between the reviewers was reached there were 81 articles for full text appraisal; 47 papers were further eliminated for methodological reasons. A total of 34 articles were deemed to be scientifically admissible for this review.

Results or Findings: Results indicate that according to the literature, adults with ID have consistently higher than normal BMI scores.

Conclusions or Implications: The findings are confounded due to the substantial level of methodological issues present within these studies. For example, several studies included very small sample sizes (e.g. < 30 participants) and there were variable methods for recording height/weight measurement values used. Overall, the current status of literature appears to support a strong prevalence of overweight and obesity among adults with ID. Targeted health promotion initiatives are needed for this population.

Underweight and Overweight Among Children and Adults Participating in Special Olympics in Europe

Pauli Rintala (University of Jyväskylä),Viviene Temple (University of Victoria), Meghann Lloyd (University of Ontario Institute of Technology), Chris Faro (State University of New York College at Cortland), John Foley (State University of New York College at Cortland)

Introduction: We know that individuals with ID experience high rates of poverty and social exclusion (PSE) and they have relatively high rates of underweight and overweight/obesity. All of these variables lead to adverse health outcomes, but have not been examined concurrently. Our aim was to examine the association of PSE, age, and gender with the Body Mass Index (BMI) status of child (7-17y) and adult (18–65y) European Union (EU) Special Olympics athletes.

Method: A total of 7,407 (1,921children and 5,486 adults) participant BMI records were available from the Special Olympics International Health Promotion database. BMI was computed in the following categories: Underweight <18.5, Normal 18.5-24.9, Overweight 25.0–29.9, and Obese ≥30. The indicator of PSE, defined as monetary poverty, material deprivation, or low work-intensity, was extracted from EU Eurostat statistics. Logistic regression analyses were used to examine whether PSE, age, and gender were associated with the likelihood of underweight or overweight/obesity.

Results or Findings: For children and adults respectively: 2.2% and 6.6% were underweight, 72.6% and 49.1% were in the normal range, 17.4% and 26.0% were overweight, and 7.8% and 18.3% were obese. Younger age and higher PSE were significantly associated with higher rates of underweight (odds ratios (OR) 0.94 and 1.03, respectively) only for adults; and being female and having lower PSE were significantly associated with overweight/obesity for both

children (OR 1.26 and .97) and adults (OR 1.55 and .96), and increasing age for adults (OR 1.04).

Conclusions or Implications: The Europe 2020 "platform against poverty" strategy aims to ensure that those experiencing PSE share the benefits of economic growth. In this study, PSE and age were associated with poor BMI status at both extremes of the PSE continuum. These findings suggest that Special Olympics health promotion efforts to foster healthy BMI need to be tailored to specific PSE circumstances in the EU.

Measuring Volume of Action for Wheelchair Basketball Classification

Jared Rehm (Huntingdon College), Adam Jagodinsky (Auburn University), Christopher Wilburn (Auburn University), Lorraine Smallwood (Auburn University), Taylor Wright (Auburn University), Jerrod Windham (Auburn University), Wendi Weimar (Auburn University)

Introduction: Adapted sports are sports that enable people with disabilities to participate in sport through modification of traditional sport or new sports designed for people with disabilities. Classification systems are utilized within adapted sports to ensure equitable competition. The focus of this project is the classification system utilized in wheelchair basketball. The primary factors of wheelchair basketball classification are the “volume of action” and trunk stability. Currently, the volume of action is not measured objectively. Therefore, the purpose of this project was to measure the range of motion associated with the volume of action using a novel field test.

Method: The volume of action was measured as a percentage of height for 20 individuals: 10 with disability, 10 without disability. This was accomplished through a reaching task requiring each participant to reach in 5 directions at 3 heights with each hand. Participants sat upon a box with hips and knees at 90 degrees. They reached at each height and direction with each hand. Distance reached was found by means of a laser distance measure pointed at a target 1.5 m away. The difference between the final position and initial position was normalized to trunk height to give a reach score for each condition.

Results or Findings: PWOD were found to have significantly higher reach scores ($p=0.023$). The scores for PWOD were higher across all heights and directions.

Conclusions or Implications: The novel reach test is able to differentiate PWD from PWOD. Further investigation is needed to discover if the test is able to stratify PWD based upon their volume of action.

Measuring Trunk Stability for Wheelchair Basketball Classification

Jared Rehm (Huntingdon College), Adam Jagodinsky (Auburn University) Christopher Wilburn (Auburn University), Lorraine Smallwood (Auburn University), Jerrod Windham (Auburn University), Taylor Wright (Auburn University), Wendi Weimar (Auburn University)

Introduction: Adapted sports are sports that enable people with disabilities to participate in sport through modification of traditional sport or new sports designed for people with disabilities. Classification systems are utilized within adapted sports to ensure equitable competition. The focus of this project is the classification system utilized in wheelchair basketball. The primary factors of wheelchair basketball classification are the “volume of action” and trunk stability. This project focuses on the measurement of trunk stability.

Method: Trunk stability was measured by a novel field test. Participants with (PWD) and without (PWOD) physical disabilities were recruited to participate. 20 participants volunteered (10 PWD, 10 PWOD). Each sat upon a box with knees and hips at 90 degrees. Participants held a force gauge and pushed the force gauge at maximum effort against a wall with and without the aid of support on the box. Participants pushed with both hands forward, as well as with each individual hand to the unilateral side for a total of 3 pushes. The loss of force from with support to without support was calculated as a percentage of the with support condition to give the trunk stability score.

Results or Findings: PWD pushed with more force with support than the PWOD, but the PWD pushed with less force that PWOD when support was removed. PWD demonstrated significantly lower trunk stability scores.

Conclusions or Implications: The novel field test presented is able to discriminate between PWD and PWOD using trunk stability scores. Future

study is needed to discover the utility of stratifying wheelchair athletes for classification using this test.

Functional Strength of Adults Participating in Special Olympics

John Foley (State University of New York College, Cortland), Viviene Temple (University of Victoria), Pauli Rintala (University of Jyväskylä), Brooke Demarco (State Univerity of New York College, Cortland), Meghann Lloyd (University of Ontario Institute of Technology)

Introduction: Special Olympics International (SOI) assesses functional strength as part of their FunFitness screening. However, there has been no examination of the relationships between the strength measures and there is concern about the usefulness of the seated push-up test (SPU) since most participants succeed at this pass/fail assessment. This study examined the relationship between the strength measures and the utility of the SPU in an international sample of Special Olympics athletes

Method: A total of 30,358 (men=19,661) adult (18–65 years) participant functional strength records were available from the SOI FunFitness database. Descriptive statistics were computed for the stand-test (time for 10 stands from sitting), sit-ups, grip strength, and SPU (hold for 20s=pass). Relationships between the strength measures were examined using correlation coefficients; except for the seated push-up which is scored dichotomously. The utility of the SPU as a screening measure was examined using logistic regression, with sex, age, stand-test, sit-ups, and grip strength as predictors.

Results or Findings: A high proportion of women (94%) and men (89%) passed the SPU test. Mean scores for women who passed/failed the SPU test were: grip strength 35.8/34.2, sit-ups 27.8/24.1, and stand-test18.4s/20.6s. Scores for men who passed/failed were: grip strength 43.7/40.6, sit-ups 29.8/24.7, and stand-test17.4s/20.7s.The relationships between the measures of strength for women ranged from r=.24 to r=.35 and for men ranged from r=.18 to r=.22. The likelihood of successfully completing the SPU was greater for women (odd ratio

(OR) =1.76), for those with faster stand-test times (OR=.94), and those completing more sit-ups (OR=1.03).

Conclusions or Implications: The low correlation coefficients suggest that the different measures of strength are necessary to capture distinctive aspects of SOI participants' functional strength. Although most participants successfully completed the SPU, it seems to be a useful indicator of other aspects of functional strength.

Accuracy of Activity Monitors in Measuring Steps in Persons with Down Syndrome

Fabio Bertapelli (University of Campinas), Jasmine S. Curtis (Missipssippi State University), Benjamin Carlson (Mississippi State University), Ben Abadie (Mississippi State University), Marquell Johnson (Univeristy of Wisconsin-Eau Claire), Stamatis Agiovlasitis (Mississippi State University)

Introduction: Tri-axial accelerometers and piezoelectric pedometers with a uni-axial accelerometer mechanism may effectively monitor daily number of steps in persons with Down syndrome (DS). Accuracy among these monitors may differ as persons with DS ambulate with greater mediolateral body motion than persons without DS. This study therefore examined the accuracy of such activity monitors in persons with DS and whether device error was associated with walking speed, anthropometric variables, or sex.

Method: Seventeen persons with DS (8 women; age 33±15 y) participated in this study. Participants walked over-ground over a 20-m course for 6 min at their preferred speed. The steps taken were measured with two accelerometers (GT3X+, Actigraph)—one worn on the right hip and one on the right wrist—and the NL-1000 New Lifestyles pedometer on the left hip. Steps were also measured with hand-tally which served as the criterion. Accuracy of devices was assessed with the absolute percent error and Bland-Altman plots. The associations of error with walking speed, height, weight, body mass index, waist circumference, leg length, and sex were evaluated with Pearson correlations.

Results or Findings: The number of steps measured by each accelerometer was significantly lower than actual steps measured by hand-tally ($p<0.001$); the pedometer did not differ from hand-tally. Absolute percent error was somewhat large, but did not differ statistically between devices (Hip accelerometer: 31.6±18.8%; Wrist accelerometer 32.7±14.2%; Pedometer: 23.2±22.8%).

Bland-Altman plots indicated underestimation of steps, especially for the accelerometers. Correlations between percent error for each device and walking speed, anthropometry, or sex ranged between -0.28 and +0.30, and were non-significant.

Conclusions or Implications: Hip- or wrist-worn tri-axial accelerometers, and a hip-worn piezoelectric pedometer with a uni-axial accelerometer mechanism have somewhat large error in measuring steps at the preferred walking speed of persons with DS. Improvements are needed in assessment of ambulatory activity of persons with DS.

Physical Activity Levels of Persons with Down Syndrome as Estimated with Accelerometry by Different Cut-points

Jasmine S. Curtis (Mississippi State University), Benjamin Carlson (Mississippi State University), Fabio Bertapelli (Mississippi State University/University of Campinas), Ben Abadie (Mississippi State University), Renee Culbertson (MIssipssippi State University), Marquell Johnson (University of Wisconsin-Eau Claire), Stamatis Agiovlasitis (Mississippi State University)

Introduction: Physical activity (PA) in persons with Down syndrome (DS) has been previously examined objectively with accelerometry using cut-points for activity intensity developed for the general population. These cut-points may not be valid for persons with DS. This study examined whether DS-specific cut-points and cut-points developed for the general population differ in estimating the PA levels of persons with DS.

Method: Thirteen persons with DS (8 women; age 31±15 y) participated in this study. Participants wore for 7 days on their right wrist an accelerometer (GT3X +, Actigraph). Moderate PA, vigorous PA, moderate-to-vigorous PA accumulated in 10-min bouts (MVPA-10), and the percent of participants meeting the PA Guidelines for Americans were assessed with three sets of cut-points: (a) Agiovlasitis et al.; (b) Freedson et al.; (c) Troiano et al. The first set of cut-points was specifically developed for persons with DS, whereas the other two for the general population.

Results or Findings: Vigorous PA was higher with the Agiovlasitis cut-points than both the Freedson and Troiano cut-points ($p < 0.001$); there was no difference between Freedson and Troiano. Moderate PA did not differ between the three methods. The Agiovlasitis cut-points estimated higher MVPA-10 than Freedson and Troiano (314±337, 57±70, and 47±63 min, respectively; $p \leq 0.036$); the Freedson cut-points estimated higher levels than Troiano ($p = 0.02$). The Agiovlasitis cut-points classified greater proportion of participants

as meeting the PA Guidelines than Freedson and Troiano (38.6%, 15.4%, and 7.7%, respectively).

Conclusions or Implications: Different accelerometer cut-points for PA intensity estimate different PA levels in persons with DS. Compared to cut-points for the general population, DS-specific cut-points estimate higher levels of vigorous PA and MVPA-10, and they classify more persons with DS as meeting the PA Guidelines for Americans. There is a need to validate accelerometry as an objective method of PA assessment in persons with DS.

Physical Activity for Adults with Visual Impairments: Impact of Socio-Demographic Factors

Justin A. Haegele (Old Dominion University), Xihe Zhu (Old Dominion University), Jihyun Lee (Sam Houston State University), Lauren Lieberman (The College at Brockport)

Introduction: Recent research suggests that adults with visual impairments tend to participate in inadequate amounts of physical activity and spend the majority of their leisure-time in sedentary activities. Unfortunately, little is known about what factors influence their physical activity participation. Therefore, the purpose of this study was to explore the impact of socio-demographic factors on the physical activity participation of adults with visual impairments.

Method: The international physical activity questionnaire-short form and a socio-demographic factor questionnaire were distributed to adult-aged individuals with visual impairments via an accessible online platform. A total of 176 adults (Mage=47.04, 52.8% female) with various visual impairment levels (53.4% B1, 12.5% B2, 30.7% B3, and 3.4% B4) completed the questionnaires. Physical activity and socio-demographic variables were analyzed descriptively and relationships were explored using correlation analysis and multiple regression analysis.

Results or Findings: On average, participants reported 413.79 minutes of moderate-to-vigorous physical activity and 2058.52 minutes of sedentary active per week. A significant amount of variance (11.6%) of physical activity was explained by the socio-demographic variables. Of the socio-demographic variables measured, only gender emerged as a significant positive predictor of total weekly physical activity ($\beta = .25$, $p <. 05$) while controlling other factors.

Conclusions or Implications: The results of this study both affirm and conflict with previous research. Unlike previous research focusing on those with visual

impairments, this study demonstrated that gender was an important predictor of physical activity. This finding is consistent with population-wide data on individuals without disabilities in the US. Although practically and statistically significant, the variance in physical activity attributed to socio-demographic variables represents a nominal portion of what may influence an individual with a visual impairment to be physically active, and future research should include additional variables (e.g., socioeconomic status) to further explore this topic.

Social Cognitive Theory Determinants of Physical Activity in Adults with Visual Impairments

Justin A. Haegele (Old Dominion University), Ali Brian (University of South Carolina), Lauren Lieberman (The College at Brockport)

Introduction: Individuals with visual impairments tend to spend less time participating in physical activity and more time engaging in sedentary behaviors than their typically developing peers. When exploring reasons why those with visual impairments may be physically inactive, little research has been conducted that investigates determinants of physical activity from a theoretical perspective. The purpose of the current study was to examine social cognitive theory based predictors of physical activity and sedentary behavior for adults with visual impairments.

Method: Ninety-two participants (women =50; ages 18-77 [Mage=46.88, SD=13.91]) with a range of visual impairment classifications (B1=53, B2=11, B3=28), were recruited from two visual impairment-related organizations in the United States for this study. Participants completed four questionnaires focusing on physical activity, demographic variables, and two social cognitive theory constructs; social support and self-regulation. Analyses were conducted utilizing hierarchical regression analyses to evaluate factors predicting total metabolic equivalent minutes (METs) and sitting time.

Results or Findings: Hierarchical regressions revealed that the social support and self-regulation significantly predicted sitting time, and that social support fully mediated self-regulation when predicting total METs.

Conclusions or Implications: This study provides the first empirical evidence explaining social cognitive theory constructs as predictors of physical activity and sedentary behavior among adults with visual impairments. Because of the utility of these theoretical constructs in predicting physical activity, future

intervention research can consider designing and implementing interventions framed around social support and self-regulation.

Generalization Tactics to Promote Leisure-Time Physical Activity for Students with Intellectual Disabilities

Seung Yeon Park (The Ohio State University), Justin Haegele (Old Dominion University)

Primary issue(s) to be presented and discussed: This presentation will describe several tactics for programming for generalization and how each can be incorporated into physical education instruction with proper planning. Although specific examples are given, there are numerous ways to infuse each tactic into physical education to promote leisure-time physical activity participation for students with ID. Physical education teachers can plan to use one or a combination of these tactics to program for generalization. It is important to note that physical education teachers can request support from special education teachers, behavior analysts, or other members of the Individualized Education Program (IEP) team when considering strategies to implement these tactics.

Session significance: Research suggests that school-aged individuals with intellectual disabilities (ID) tend to be less physically active than their typically developing peers (e.g., Shields, King, Corbett, & Imms, 2014). While these students can be successful in acquiring motor and sport-related skills during physical education, they tend not to use those skills in settings outside of school (Reid, 1993; Yang & Porretta, 1999). This can be due to difficulties with generalization. Generalization refers to the use of newly acquired skills or behaviors in non-training environments (Cooper, Heron, & Heward, 2007). Difficulties with generalization of motor skills may contribute to low levels of physical activity and sport participation by individuals with ID outside of physical education. Since the generalization of skills learned in physical education may not occur automatically, physical education teachers must plan and teach for generalized outcomes. Therefore, the purpose of this paper is to

describe how physical education teachers can use generalization tactics to promote leisure-time physical activity for individuals with ID.

Relation to conference theme: The conference theme is The Role of Inter-disciplinarity. The aim of this session is to provide practical ideas how to generalize physical activity for children with intellectual disability. While there is much emphasis for promoting health related fitness, it will be important to generalize learning of physical activity for students with intellectual disability in terms of lifetime. The presenters will provide practical ideas which are heavily based on special education.

Description of session:

1. Provide a Full-Range of Relevant Examples

2. Provide sufficient stimulus examples.

3. Teach sufficient response examples

4. Positive Reinforcement Tactics

Reference: Cooper, J.O., Heron, T.E., & Heward, W.L. (2007). Applied behavior analysis (2nd Ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Camp Abilities Brazil: An Experience Report

Joslei Viana de Souza (State University of Santa Cruz), Lauren Lieberman (The College at Brockport), Mey de Abreu van Munster (Federal University of São Carlos)

Introduction: Camp Abilities is an educational sports camp for children and teens who are visually impaired, blind, or deafblind. Camp Abilities was founded in 1996 by Dr. Lauren Lieberman at SUNY Brockport. The model has since expanded to 19 American states and seven different countries. The first Camp Abilities in Brazil was implemented at the State University of Santa Cruz-UESC in Ilheus / Bahia, in 2015, with support from the Coordination for the Improvement of Higher Education Personnel (CAPES).

Method: This presentation is an experiential qualitative report from Camp Abilities Brazil. The participants were 14 people with visual impairment (including blindness and low vision), five women and nine men, ages 14 to 51 years old. Staff was headed by Dr. Joslei Souza (UESC), composed by 40 Physical Education undergrad students (counselors), 14 former students (specialists) among other volunteers. Camp Abilities Brazil took place in the physical and sports facilities of the College of Physical Education (UESC), and at the beach and surroundings of Ilhéus. The camp lasted three days and the schedule consisted of the following sports and activities: athletics, goalball, five-a-side soccer, swimming, kayaking, Stand Up Paddle and surf.

Results or Findings: For campers, the experience was innovative because they reported it was the first opportunity to participate in a camp, favoring fellowship and social interaction. Also, it provided in a great chance to improve the professional training, stimulating current and future physical education teachers to encourage the participation of people with visual impairment in physical activities, sports and leisure.

Conclusions or Implications: Besides providing access to sports and recreational activities (especially at the beach), the camp empowered people with visual impairments and current/future teachers to know the modifications that are necessary to actively engage in these activities.

Physical Activity Experiences Among Families of Children with Visual Impairments and Blindness

Luis Columna (Syracuse University), Michael Norris (Syracuse University), Suzanna Rocco-Dillon (Texas Woman's University), Kevin Heffernan (Syracuse University), Tiago Barreira (Syracuse University)

Introduction: Children with visual impairment (VI) have limited participation in recreational and sport activities compared to their peers without disabilities. This is due in part to the lack of recreational opportunities and lack of parental awareness of the benefits of physical activity (Columna, Pyfer, & Senne, 2011). Moreover, parents may lack skills to engage, model, or teach their children in physical activity/sport. The purpose of the study was to describe the experiences of families of children with VI regarding physical activity.

Method: The research methods was descriptive qualitative study. Participants were parents of children with VI (n = 10) who took part in one-on-one semi-structured phone interviews. Data were analyzed inductively by preparing the data (transcribing), reducing the data (reading, bracketing, gleaning, and winnowing text) as well as arranging into themes and by theorizing.

Results or Findings: Findings revealed that parents valued physical activity, but they had to modify their personal desires to fight for the well-being of their children. Parents lacked the skills to teach and advocate for their children regarding physical activity. They voiced the need for a support system that would allow them to be more physically active. Two themes emerged from the data analysis: (1) We want to…yet are not sure how, and (2) I don’t want to push too far.

Conclusions or Implications: Parents of children with VI appear to have a deficit in knowledge and skills regarding physical activity promotion. There is a need to provide training and hands-on educational experiences for parents. A way to

eliminate some of the barriers is by listening to the needs of families of children with visual impairments. There is a need to provide interdisciplinary training for these families regarding physical activity, but there is also a need to educate physical activity/education professionals and the community regarding the physical activity and physical education needs of children with visual impairments.

Acknowledgement of Research Support (Optional): J. Henry & Martha E. DeBoer Fund at the Central New York Community Foundation and the Jim and Juli Boeheim Foundation.

Monitoring of the Determinants Affecting the Lifestyle of Children and Youth with Disabilities and Long-term Illness

Ondřej Ješina (University Palackého, Olomouc), Tomáš Vyhlídal (University Palackého, Olomouc), Martin Kudláček (University Palackého, Olomouc), Zbyněk Janečka (University Palackého, Olomouc), Martin Kučera (University Palackého, Olomouc), Daniel Mikeška (University Palackého, Olomouc), Julie Wittmanová (University Palackého, Olomouc), Lucie Ješinová (University Palackého, Olomouc)

Introduction: The promoting physical activity and overall health for persons with special needs must respect their special needs. Some of the activities and strategies are effective in this area among the general population, children and youth with disabilities or long term illness, totally failing. Unfortunately, few of the internationally accepted documents, type the minimum recommendations for physical activity (eg. The WHO) does not reflect on the situation of children and youth with disabilities or long-term illness.

Method: The main method is a questionnaire. We upgraded the classic HBSC questionnaire for target group people with disabilities. Basic modifications of the questionnaire are based on reducing the number of questions, the direct targeting of the examined groups, adding relevant issues directly related to the issue of individual disability, adaptation of the word stylistics for persons with hearing disabilities. In the basic format of the questionnaire in its current form contains a total of 47 questions that have been verified by the pilot. For subsequent research will even further reduction on the basis of the content and the factor analysis.In the pilot of the research investigation included 154 children with oncological diseases, vision, hearing and physical disabilities. In the meantime, in the research aren´t involved the person with mental and multiple disabilities.

Results or Findings: From the results it is apparent low level physical activities during the weekly mode for all groups of children with disabilities. Distressing is the finding that only 17.6% of boys and 10% of girls after cure of oncological disease meets the recommended volume of the physical activity for a week. For pupils with disabilities results are even lower. Interesting results provide us with reference physical activities. For example, swimming is the most preferred level of physical activity of children with physical disabilities, and 18% of them pay 2 times per week. They perceive it as a rehabilitation tool but not the leisure time physical activity. It´s implemented primarily in the school environment. Another interesting finding relates to more than 50% unemployment, mothers of children with disabilities and that more than 70% of boys spend most of the time after school at the computer playing games.

Conclusions or Implications: Support social inclusion lies not only in changes of legislative norms, but in particular in understanding the necessity of changes in the conditions and support for all population groups discussed. Not only the school, but in particular the families of children with disabilities should be educated about keeping to a healthy lifestyle and the optimal fulfilment of the free time. Workers in the context of free time (not just teachers and instructors) should be informed about the various steps leading to the promotion of physical activities in children with disabilities and long term illness. It means the medical and the State administration staff. Despite of the legislative and regulatory changes in the Czech Republic as a postcommunist country, we are not witnesses of changes in the real situation in the society. Physical activity for persons with disabilities is located on the edge of the interest of the political authorities in the resorts of education, social, sports and health care.

Acknowledgement of Research Support (Optional): On the initiative of the WHO, the international working group that addresses the Health behaviour in school-aged children (HBSC) decided to modify and extend the methodology for monitoring the determinant affecting the lifestyle on the issues of right of

persons with disabilities and long-term illness. In the year 2015, has completed the initial pilot phase, which will build the collection for groups of children and youth with visual, physical, hearing and intellectual disabilities, like the oncological diseases. The aim of the paper is to present the initiative and introduce disHBSC as a new approach.

Physical Fitness of Finnish Special Olympics Athletes

Virpi Remahl (University of Jyväskylä/ Sport Institute of Pajulahti), Pauli Rintala (University of Jyväskylä), Viviene Temple (University of Victoria)

Introduction: Physical fitness of individuals with intellectual disability (ID) is lower than individuals without ID. One goal of Special Olympics (SO) programs is to develop athletes' physical fitness. FUNfitness is one of the seven SO Healthy Athletes health screenings, which is quite unknown among Finnish SO athletes. Therefore, the aim of this study was to use FUNFitness to screen Finnish SO athletes' level of flexibility, muscles strength, balance and aerobic fitness and compare these results to established SO International (SOI) data.

Method: Participants were 48 Finnish Special Olympics athletes (34 men, 14 women, age 10-49 years), who regularly participate in athletics, bowling, soccer, tennis or multiple sports. The FUNfitness battery consisted of 8 items: functional shoulder rotation, timed-stands test, partial sit-up test, hand-grip, single-leg stance, and the 2-minute step test. Test items were completed during their SO training camp in February 2016. Means and SDs for fitness test items were computed and the percentage of athletes needing further education to improve function (i.e. outside the healthy range according to SOI criteria) was calculated.

Results or Findings: The proportion of Finnish SO athletes compared to SOI athletes needing further education to improve function was: 22% vs. 54% for flexibility, 26% vs. 35% for strength, and 35% vs. 43% for balance. Average steps taken was 109.2 (SD=5.5) for women and 110.3 (SD=6.7) for men.

Conclusions or Implications: Finnish SO athletes had fewer strength, flexibility, and balance problems compared to SOI athletes. However, steps taken by the Finnish athletes were similar to step counts of older adults (60–64 years) in the general population. Due to a small sample of Finnish SO athletes and lack of

SOI comparative data for the 2-minute step test, the conclusions must be made cautiously. However, the FUNfitness test seems to work well for screening athletes' fitness levels.

Concurrent Validity of the Two-Minute Step Test

Virpi Remahl (University of Jyväskylä/ Sport Institute of Pajulahti), Viviene Temple (University of Victoria), Pauli Rintala (University of Jyväskylä)

Introduction: The modified Six-Minute Walk Test (6MWT) is a valid and reliable measure of aerobic power in adults with intellectual disability (ID). However, use of the 6MWT or other similar tests as part of the Special Olympics International (SOI) Healthy Athletes screening is problematic because of the length of time and space required for the test. The 2-minute step test (2mST) is a quick, alternative aerobic endurance test which validity has not been tested with individuals who have ID. Therefore, the aim of this study was to determine the concurrent validity of 2mST with the 6MWT.

Method: Participants were 35 Finnish Special Olympics athletes (males=74%, mean age=27.2±8.8 years) who participated in athletics, bowling, soccer, tennis, or multiple sports. The 6MWT and 2mST were completed once by each athlete. Participants walked as quickly as possible along a straight 30m path and around a cone at each end with a 1:1 pacer and verbal encouragement every 15s. The 2mST required an individual to step in place for two minutes, raising the knees to a height halfway between the iliac crest and the middle of the patella. Means and SDs for 6-minute walk distance (6MWD) and the number of steps (Steps) were computed, and linear regression analysis was used to describe the relationships between Steps and 6MWD.

Results or Findings: Mean Steps were 112.7 (SD=23.3) and mean 6MWD was 669.5 m (SD=96.6). The bivariate correlation coefficient between Steps and walk distance was .67 and the regression model statistically significant $p<.001$; R2 of .45.

Conclusions or Implications: These results suggest that the 2mST does provide meaningful fitness data, with the step test sharing 45% of the variance with the

6MWT. Further development work to establish: reliability, variation between trials, validity in broader samples, and in relation to other measures of aerobic power is needed.

Spousal Support of Physical Activity in Individuals with Multiple Sclerosis

Victoria Wood (University of Vermont), Susan Kasser (University of Vermont)

Introduction: Physical activity has been widely recommended to manage symptoms and forestall advancing disability in individuals with multiple sclerosis (MS). However, most individuals with MS are physically inactive or do not meet recommended health-promoting levels of physical activity. Close interpersonal relationships have been shown to facilitate positive physical activity behavior in people with chronic disease. The purpose of this qualitative study was to explore spousal support for promoting physical activity in individuals with MS.

Method: Eight couples were recruited for individual face-to-face interviews. Participants were asked to discuss specific spousal support strategies centered on affective, behavioral, and cognitive aspects related to support for physical activity. Following each interview, tape-recorded sessions were transcribed. Core meanings were then found through thematic analysis of transcribed interviews to develop relevant codes. Themes were identified from common patterns and connections across coded data. Thematic statements were then linked back to participant data to determine their relevance to each individual and to select participant quotes representative of identified themes.

Results or Findings: The results indicated that physical activity was impacted by both positive and negative spousal strategies. Four themes related to positive strategies: 1) spousal knowledge regarding risks and benefits of physical activity and MS, 2) perception of spousal expectations in relation to activity level, 3) spousal action by modifying own behavior and co-planning activity, and 4) valuing physical activity as means to strengthen relationship. The one theme related to negative support involved warning of consequences of inactivity.

Conclusions or Implications: Within the marital relationship, spousal expectation and communication played an important role in the PA behavior of the participants with MS. Spousal support of PA incorporated both positive and negative control strategies. Insights into specific spousal strategies may assist practitioners in developing targeted and family-oriented interventions that facilitate physical activity behavior in those with MS.

A Delphi Investigation of Adapted Physical Education Practicum and Recommendations for Best Practice

Andrea Taliaferro (West Virginia University), Sean Bulger (West Virginia University)

Introduction: While the importance of Adapted Physical Education (APE) practicum experiences are well established in physical education teacher education, there is little consensus regarding the preferred purpose and structure. To address this gap, researchers conducted a Delphi investigation to determine expert consensus regarding the essential characteristics of an APE practicum experience for pre-service physical educators.

Method: Researchers used a three-round Delphi procedure involving the repeated circulation of an online questionnaire to a panel of content experts (n=24). During Round 1, panel members were asked to generate items in response to an open-ended prompt. The panelists were then requested to rate these recommendations using 7-point Likert scales of importance and feasibility in the following rounds.

Results or Findings: The panel generated 70 recommendations during the first round. Twelve items were eliminated from the analysis for failing to reach a mean rating of 5 on either scale following the third round. Ordered pair data were graphed on an XY scatterplot matrix to visually depict the correlations between variables. Eleven additional items with mean ratings of less than 6 in both importance and feasibility were further excluded. Of the remaining 47 items, 24 were determined to be both very important and feasible (both means > 6), 21 were determined to be very important (mean ≥ 6) and probably feasible (mean ≥ 5), and 2 were determined to be feasible (mean ≥ 6) and moderately important (mean ≥ 5). Researchers completed a post hoc qualitative cluster analysis on the remaining items to identify major themes.

Conclusions or Implications: Results of this study are expected to aid in the development of a checklist/rating tool to facilitate the development, implementation, evaluation, and improvement of APE practicum experiences. Follow-up case studies involving site visits to model APE practicum sites will be conducted to provide further validity and reliability of the results.

Impact of Active Practicum in Dance: Pre-Service Teachers' Experiences

Bomna Ko (East Carolina University), Boni Boswell (East Carolina University)
Seok Yoon (Chowan University)

Introduction: Questions remain about physical educators' trainings to provide successful inclusion classes during their physical education teacher education (PETE) programs (Morley, et al., 2005; Rust & Sinelnikov, 2010; Taliaferro, et al., 2015). Practicum experiences designed in various approaches (e.g., APE course plus practicum, off-and on-campus practicum experiences) have been found to have a positive impact on PETE students' attitudes, perceived competence, and learning toward teaching students with disabilities (Morley et al., 2005; Taliaferro et al., 2015). However, limited research has focused on the impact of dance practicum experiences with students with disabilities in early stage of PETE program. Therefore, this study explored the experiences of pre-service teachers engaged in an off-campus active dance practicum.

Method: This study employed a phenomenological study design to "describe the meaning for several individuals of their lived experiences of" (Creswell, 2007, p. 57). Participant preservice teachers (N=16) in one early PETE course engaged in a 6 weeks of off-campus dance practicum with middle school students with disabilities. Content focused on pattern dances (e.g., social dances, line dances, folk dances) and creative educational dance. Semi-structure group interviews were collected prior to and after the practicum, audio-recorded and transcribed verbatim. Data were analyzed using the content analysis and constant comparative analysis. Credibility and trustworthiness were examined through triangulation and peer review and debriefing.

Results or Findings: Four themes emerged which highlighted shifts in perceptions: 1) empathy with students with disabilities, 2) responsive teaching, 3) sharing enjoyment, and 4) use of dance as facilitator.

Conclusions or Implications: The major impact of active involvement was four fold: increased empathy and confidence accompanied with responsive teaching and perceptions of dance as a facilitator of physical and social development. This study supported active involvement of students with disabilities and PETE students during the practicum.

A Pilot Community Outreach Program Igniting Interest in ParaSports Among Grade 5 Students

Cathleen Edwards (Abilities Centre), Jennifer Leo (Abilities Centre), G. Shiu, S. Klein, C. Mandaric

Introduction: In August of 2015, Toronto and a number of communities in Southern Ontario served as the host sites for the events in the Parapan Am Games. Abilities Centre, a state-of-the-art facility in Whitby Ontario served as the host site for two events: Boccia and Judo. In an effort to raise awareness of ParaSport and the events in Whitby, Abilities Centre in partnership with the Town of Whitby provided a 12-week outreach program in the Winter of 2015.

Method: A total of 245 students in grade 5 from four different schools participated in weekly activity sessions based on the Canadian Paralympic Committee's (CPC) Paralympic FUNdamentals resource. Through this resource, students learned about the following four ParaSports: Boccia, Sitting Volleyball, Athletics and Goalball. Students completed surveys at the start of the first session and at the end of their final session. Answers were compiled and analyzed using Fluid Surveys.

Results or Findings: Results of the surveys indicate that participation in this program increased awareness of the Paralympics by 30.5%. Participation in the program raised awareness of the four ParaSports involved. Following the 12-week program, 94.5% of students were aware of Goalball and 99% were aware of Sitting Volleyball. Through the games and activities, students learned that it is easier than they believed to participate/play these sports. At the end of 12 weeks, the grade 5 students remained excited about ParaSport and the up-coming Parapan Am Games.

Conclusions or Implications: The outcome of this pilot project indicates that the CPC Paralympic FUNdamentals resource is effective at increasing awareness of ParaSport among youth.

Acknowledgement of Research Support (Optional): Canadian Paralympic Committee

The Effects of Service Learning Program on Acceptance of Diversity

Jessica Hamm (Georgia Gwinnet College/Oregon State University), Jill Pawlowski (Oregon State University), Erin Siebert (Oregon State University), Jennifer Beamer (Oregon State University), Joonkoo Yun (Oregon State University)

Introduction: Acceptance of diversity is essential for physical activity practitioners. The minority model of disability, a sub-set of the social model, argues that the experiences of individuals with disabilities are similar to those of racial minorities. This model believes that individuals with disabilities should be viewed as a minority group. Based upon the Intergroup Contact Theory, quality experiences can improve acceptance of diversity. Therefore, the purpose of this study was to examine if experiences of working with individuals with disabilities influence acceptance of diversity.

Method: A total of 108 undergraduate students from the Northwest region of the United States participated in an eight-week service-learning program focused on physical activity promotion for youth with disabilities. All participants completed the short-form of the Miville-Guzman Universality-Diversity Scale as a pre and posttest. This scale measures overall acceptance of diversity and three sub-constructs including: comfort with differences, diversity of contact, and relativistic appreciation. Four separate one way repeated ANOVAs were used to examine the effects of the participants' service learning experiences on their acceptance of diversity. In order to adjust for type I error due to multiple comparisons, Bonferroni correction was utilized and the alpha level was set to . 0125.

Results or Findings: Results indicated a significant difference between pre and posttest on one dependent variable, diversity of contact, $F(1,107) = 7.28, P < .001$, Partial $\eta^2 = .064$. Small but positive increases in participant's diversity of contact were observed.

Conclusions or Implications: Based on these results, engaging in service learning programs may not only make a positive impact on student's personal growth and competence working with individuals with disabilities, but also may increase their diversity of contact. Diversity of Contact represents the individual's interest in participating in diverse social and cultural activities.

Findings from this study were inconclusive regarding the impact of working with youth with disabilities on the overall acceptance of diversity.

Community-Based Experiential Learning: A Way of Reflexive, Transformative, and Relational Pedagogy in Adapted Physical Activity

Kyoung June Yi (Memorial University), Matthew Patey (Memorial University), Eun-Young Lee (University of Alberta)

Introduction: Challenges in today's higher education require new ways of thinking and being. "Educator-driven" curriculum design—that is, designed without careful consideration of students, communities, and global voices—is sometimes criticized as paternalistic, irrelevant, and even exploitative. This type of taken-for-granted curriculum design in adapted physical activity might be linked to a practical problem: the "disconnection" amongst educators, students, and community. Through action research oriented teaching and learning, this study aims at exploring community-based experiential learning as an alternative approach to this educator-driven approach. This study involved (1) providing greater community-based experiential learning experiences for students, (2) thinking critically about researchers' own fixed or predetermined pedagogic practices and (3) shifting their taken-for-granted educator stories in order to highlight community-based experiential learning approach as a way of reflexive, transformative, and relational pedagogy in adapted physical activity.

Method: Action learning (i.e., an inquiry approach focusing on "bringing people together to learn from each other's experiences"; Kemmis & McTaggart, 2005, p. 561) and narrative inquiry (i.e., a study of experience aimed at enriching and transforming experiences by writing, sharing, and collaboratively reflecting on stories of one's lived experience; Clandinin & Connelly, 2000) were utilized to capture the community-based pedagogic experiences of researchers.

Results or Findings: This study involved "living" and "attending" to researchers own pedagogic experiences in community-based experiential learning settings (Clandinin & Connelly, 2000, p. 120). This inquiry also involved examining their teaching and learning experiences to identify new practical pedagogic

possibilities in higher education. Critical moments, reflexive insights, and transformed practices were captured thorough narrative writings and will be shared during presentation.

Conclusions or Implications: This presentation would offer audiences a vicarious experience in which their experiential background is enlarged to engage in community-based experiential learning in their own pedagogic practices.

Acknowledgement of Research Support (Optional): Memorial University Start-up Grant

Successful Strategies for Students of School Inclusion with Hearing Disabilities in Physical Education Classes

Maria Luiza Salzani Fiorini (Universidade Estadual Paulista), Eduardo José Manzini (Universidade Estadual Paulista)

Introduction: School inclusion of disabled students in physical education classes demands the teacher strategies which create favorable conditions for the participation of the students with and without disabilities in the same activity. The study aimed to identify, and describe successful strategies of physical education teachers for school inclusion of students with hearing impairment.

Method: Three teachers of Elementary School in Physical Education (1st to 5th year) and the respective classes in which there was a student with hearing impairment participated in the study. Four footages were conducted in each class, resulting in a total of 12 recorded classes. The analysis of the filming was based on microgenetic analysis indicated to study the processes of change, guided to detail and parts interactive episodes.

Results or Findings: Four categories of successful strategies were identified: 1) strategies that precede the main activity, for example, to distribute students side by side, forming a circle for the student with hearing impairment can focus in the classmates and the teacher that are in the student visual field; 2) strategies for the teaching of the activity, for example, explain verbally the activity for all students and then explain individually to the student with hearing impairment through gestures and body movements; 3) Strategies to promote the participation, for example, adapting the rule; 4) Strategies for the communication, for example, to establish communication through gestures and body movements.

Conclusions or Implications: It concludes that for creating favorable conditions in the inclusion of students with hearing impairment in Physical Education classes the successful strategies need to be directed to different aspects of one same class. School inclusion permeates the actions of teachers before and during the main activity, and also actions to promote the participation and communication. It is noteworthy that it will be possible to promote ongoing training of participating teachers based on the identified strategies.

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Effects of an Adapted Physical Education Training Package on Special Education Teacher Instruction

Michael K. Laughlin (William Paterson University), Nathan M. Murata (University of Hawaii at Manoa)

Introduction: Secondary students with low incidence disabilities (SSLID) represent a small student population transitioning away from school settings despite significant limitations to motor movement, due to the severe and profound nature of their disabilities. Adapted physical educators often rely upon unique approaches to facilitate functional motor skill (FMS) acquisition for students with disabilities. Despite adapted physical educator expertise, SSLID continually receive FMS acquisition instruction from assorted professionals, including special education teachers, due to intricate health needs, school-level constraints, and availability of qualified personnel. Yet, special educators are faced with instructional challenges which can include excessive paperwork and lack of available motor assessments. As such, the purpose of this study was to examine the effects of a training package consisting of the Flex Grid Teaching Model (FGTM), a two-page teaching model and assessment tool, along with adapted physical education consultation, on special education teacher FMS acquisition instruction to SSLID.

Method: We implemented a multiple baseline across subjects design to measure the rate at which three secondary special education teachers implemented acquisition instruction featuring two specific teaching methods (systematic prompting, and specific reinforcement plan) during one-to-one instruction with one student from each teacher's self-contained classroom. Following baseline measure, each teacher was trained to use the FGTM and given ongoing, individualized adapted physical education consultation. Baseline and intervention results were equated to percentages and converted to data points for visual inspection across six classic criteria used with applied

behavior analysis. Descriptive statistics, interobserver agreement, and treatment integrity data were collected in addition to social validity of the training package.

Results or Findings: Results indicated a functional relationship exists between use of the training package and an increase in teacher FMS acquisition instruction.

Conclusions or Implications: While further investigation is required, this study demonstrated the training package can benefit special education teachers whom provide FMS acquisition instruction to SSLID.

Pre-Service Physical Educators' Perspectives on Adapted Physical Education Practicum Experience

Mihye Jeong (East Stroudsburg University of Pennsylvania), Hyun-Kyoung Oh (California State University, San Bernardino), So-Yeun Kim (Northern Illinois University)

Introduction: Purposes of this study were to determine factors affecting pre-service physical educators' confidence in teaching students with disabilities (SWD) and examine their confidence level changes in teaching SWD before and after adapted physical education (APE) practicum.

Method: A convenience sample of 79 pre-service physical educators (female, 35.4%; male, 64.6%) participated in this study. All participants were undergraduate/credential students enrolled in APE courses in different universities. All participants completed a questionnaire before and after their APE practicum. The questionnaire consisted of demographic questions, 4 open-ended questions, and 3 statements pertaining to pre-service physical educators' confidence level in working with SWD. All items used a 5-point Likert scale.

Results or Findings: A paired-samples t-test was conducted to compare pre-service physical educators' confidence level before and after the practicum. There was a significant increase in pre-service physical educators' confidence level after the practicum (M = 4.08, SD = .73) compared to their confidence level before the practicum (M = 2.88, SD = .98); t (77) = 11.196, p = .000. Results of a standard multiple regression indicated that 49% of variance in confidence level after the practicum were explained by confidence level before the APE practicum, previous experience, quality of previous experience, number of APE course work, professional attributes, and the value of the practicum experience [F (6, 71) = 11.14, p = .000]. The determinants of confidence level after the practicum were the value of the practicum experience

(β = .55) followed by confidence level before the practicum (β = .38). Analysis of open-ended questions had revealed that learning about different instructional strategies (28%) and different types of disabilities (27%) were pre-service physical educators' expectations before the practicum. However, they expressed behavior management (22%) as the greatest challenge after the practicum.

Conclusions or Implications: As a result of this study, the APE practicum experience enhanced pre-service teachers' confidence level.

Dimensions of Emerging Adulthood: Differences between Adapted Physical Education and General Physical Education Preservice Candidates?

Rebecca Bryan (State University of New York, Cortland), John Foley (State University of New York, Cortland)

Introduction: College students go through significant changes in their lives between freshman year and graduation. Students are typically between the ages of 18-25 which is a time for identity exploration and transition from adolescents to young adulthood. During this period of emerging adulthood individuals do not see themselves as adolescents and many do not see themselves as quite adult either. Similar to adolescents, emerging adulthood is culturally constructed. Due to the culture of college life and of departments and programs the purpose of this study is to examine if there is a difference in the dimensions of emerging adulthood between preservice teacher candidates with and without an added emphasis of Adapted Physical Education.

Method: Participants, 17 females & 38 males ranging in age form 20-23 completed The IDEA: Inventory of the Dimensions of Emerging Adulthood survey during their final semester on campus before student teaching. Preservice teaching candidates were classified into 2 groups: General Physical Education (GPE) and Adapted Physical Education (APE). Those with the APE classification were completing an APE emphasis that has almost an additional semester of coursework. A series of 2 X 2 ANOVA's (Teaching Emphasis X Gender) were run on 6 dimensions of adulthood.

Results or Findings: There were no significant differences by teaching emphasis and gender in any of the 6 categories: Identity Exploration, Experimentation/Possibilities, Negativity/Instability, Other-Focused, Self-Focused, Feeling "In-Between".

Conclusions or Implications: There were no significant differences found between students with an adapted physical education emphasis and those without on the IDEA. Female and male students with and without an emphasis in adapted physical education were more similar than different. Further investigation is recommended to explore how students' scores on the IDEA may change over time in college and early in their teaching careers.

Reliability of a Seated Balance Test Using the Biodex Balance System

Laurie A. Malone (UAB/Lakeshore Research Collaborative), Sarah A. Graham (University of Alabama at Birmingham), Dustin Dew (UAB/Lakeshore Research Collaborative)

Introduction: Seated balance control is necessary for activities of daily living for wheelchair users. Similar to standing balance, seated balance decreases risk and fear of falling, improves functional mobility, and increases independence. Purpose: To determine reliability of balance measures provided by the Biodex Balance System™ SD Limits of Stability (LOS) Test in wheelchair users, and compare within and between-session reliability coefficients for seated and standing versions of the test.

Method: Sixteen participants with a physical disability and seventeen nonimpaired controls performed the Biodex LOS test. This test involved leaning toward eight targets on a screen in random order. Participants with a disability performed a seated test, while nonimpaired controls performed the standard, standing version. The seated test used square blocks placed centrally on Biodex platform, with height adjusted to ensure hips were flexed 90°. Participants performed three trials across two testing sessions (S1, S2). Intraclass correlation coefficients (ICCs) were used to determine reliability of balance scores, which included time to complete leaning toward each target per trial, overall directional-control score per trial, and average directional-control score per target.

Results or Findings: Within-session seated balance time (ICC(3,3)=0.987(S1), 0.985(S2), p≤0.001) and directional-control scores (ICC(3,3)=0.932(S1), 0.891(S2), p≤0.001) were highly reliable. Standing balance times were less reliable (ICC(3,3)=0.597, p=0.012(S1); 0.709, p=0.001(S2)), but directional-control scores were highly reliable (ICC(3,3)=0.868(S1), 0.919(S2), p≤0.001). Between-session ICCs were highly reliable for seated balance time

(ICC(3,2)=0.993, p≤0.001) and directional-control scores (0.912, p≤0.001). For standing balance, between-session ICCs were 0.701 (p=0.010) for time, and 0.946 (p≤0.001) for directional control. Between-session ICCs for directional scores per target were lower, ranging from 0.534 to 0.952 (p=0.075 to p≤0.001) for seated balance, and 0.425 to 0.864 (p=0.14 to p≤0.001) for standing balance.

Conclusions or Implications: Within and between-session balance scores obtained from the seated balance test on the Biodex Balance System™ SD demonstrated high reliability, comparable or superior to the standing test version.

The Need, Value, and Role of Remote Video Supervision in Preservice APE/APA Teacher Training

Luke E. Kelly (University of Virginia), Wesley J. Wilson (University of Virginia)

Primary issue(s) to be presented and discussed: The growth and economic advantages of online education is dramatically altering how instruction is delivered in higher education. The implications of these trends will be discussed with particular emphasis on the use of remote video supervision in adapted physical education (APE) teacher training.

Session significance: In this session, we will describe how technology--a remote video supervision system--can be used to address the gaps between traditional and online education. This system seeks to replace traditional supervision of preservice APE teachers in the field, which has historically been perpetrated with inefficiencies and challenges for supervisors due to constraints of travel time and cost. The remote video supervision system with be explained conceptually and demonstrated for attendees.

Relation to conference theme: We are revisiting and questioning the assumptions and traditional practices of preservice teacher supervision in relation to what has been learned about instructional design and effective supervision practices.

Description of session: -Introduce the current trends in higher education and online education

-Review the challenges associated with traditional supervision of APE preservice teachers

-Demonstrate how the remote video supervision system works

-Discuss advantages and challenges of using remote supervision

Reference: Rogers, A., & Keil, V. L. (2007). Restructuring a traditional student teacher supervision model: Fostering enhanced professional development and mentoring within a professional development school context. Teaching and Teacher Education, 23, 63–80.

Investigating the Outcomes and Perceptions of an Inclusive Aquatic Exercise Class for University Students With Physical Disabilities

Jennifer Dysterheft, Gioella Chaparro, Olivia Jones, Laura Rice, Ian Rice

Introduction: In 2011, over 6% of the undergraduate population in the U.S. had a physical disability. Less than 30% of college students with physical disabilities (SPD) participate in leisure time physical activity (LTPA). As the population of SPD continues to grow, there is a need to promote healthy behavioral habits by providing more accessible recreational programs. Although the critical physical and psycho-social benefits of PA for individuals with physical disabilities are well known, there still remains a dearth of information on the LTPA levels of SPD and the benefits of LTPA participation. This study was the first to examine the outcomes and experiences of a university-offered, adapted recreational PA course for SPD. Information from this study was aimed to assist in the improvement and design of adapted recreational programming.

Method: Six undergraduate SPD participated in an adapted aquatic exercise class for 5 weeks. SPD were assigned to personal undergraduate exercise assistants who assisted with preparation and exercises. Validated surveys and in-depth interviews were used to assess pre- and post-intervention PA levels, quality of life, exercise self-efficacy, social inclusion, and perceived experiences and outcomes. For control purposes, a group of SPD, who remained physically inactive for the 5 week period, completed validated survey measures.

Results or Findings: Despite no changes in the survey measures, the short interviews exhibited valuable data. The interviews assisted to examine the overall experiences of participants and their perceived outcomes of participation in the class. The main themes included: SPD Experiences, Initial Perceptions and Future Recommendations, and Outcomes of Participation. The theme of Initial Perceptions and Future Recommendations was found to

consist of new, novel information significant and relevant for future program design.

Conclusions or Implications: The results of this study provide information essential to develop and build accessible recreational programs for SPD. Results demonstrate these programs may benefit SPD physically and psycho-socially.

Acknowledgement of Research Support (Optional): We would like to thank all of the student assistants that helped with the class and all of the SWD for their willing to participate in this study.

No Title Provided

Lucie Ješinová, Miroslava Spurná, Martin Kudláček, Jana Sklenaříková

Introduction: Professionals working in the area of special education are exposed to the unique situation of occupational stress. Adapted physical education teachers are experiencing several symptoms of the burnout phenomenon. The purpose of this study was to identify factors causing job dissatisfaction among certified adapted physical education specialists in the USA.

Method: The survey was developed based on: (a) Herzberg's (1959) theory of job satisfaction, and (b) a pilot study, which examined specific factors of job dissatisfaction among adapted physical education (APE) teachers in the USA. The survey consisted of three parts: (a) demographic information, (b) paired comparison of nine general factors which could cause job dissatisfaction, and (c) paired comparison of ten APE specific factors which could cause job dissatisfaction. The participants were 113 certified adapted physical education specialists (CAPES) (88 females, 25 males), a 38% return rate of all mailed surveys.

Results or Findings: The results indicated that 39% of CAPES have seriously considered another job outside of APE and 26% of CAPES have actively searched for job outside of APE in the last two years. 113 CAPES indicated the general factors that they found the most dissatisfying in their job (listed accordingly to rank, frequency and percent of times chosen, N for each factor = 1017) were working conditions (644, 71%); policies and administration (619, 68%); interpersonal relationship with supervisors (552, 61%); supervision (484, 54%); salary (404, 45%); interpersonal relationship with subordinates (404, 45%); benefits on job (301, 33%); interpersonal relationship with peers (293, 32%); and job security (245, 27%). 110 CAPES indicated the APE specific factors they found the most dissatisfying on their job (listed accordingly to rank,

frequency and percent of times chosen, N for each factor = 990) were paperwork (687, 69%); scheduling (659, 67%); facilities (617, 62%); individualized education plan meetings (464, 47%); travel (450, 45%); number of students (429, 43%); equipment (417, 42%); variability of disabilities (381, 38%); severity of disabilities (357, 36%); and home base (353,

36%).

Conclusions or Implications: It appears that the efforts should be focused in teacher preparation and in-service support in the areas related to cooperation and communication with school administrators.

Friday, September 23nd, 9:20 - 10:40 a.m.
Concurrent Research Sessions

Quartz Room A

Comparison of Patterns of Physical Activity and Screen Time between Adolescents with and without Autism

Sean Healy (Humboldt State University), Justin Haegele (Old Dominion University), Michelle Grenier (University of New Hampshire), Jeanette Garcia, (University of Florida)

Introduction: Physical activity participation, often a dynamic, sensory stimulating, social and physical experience, can be challenging and conflict with some of the characteristics of autism (Healy & Block, 2015). Research suggests physical activity levels of children with autism are significantly lower compared to their peers without autism (Macdonald, Esposito, & Ulrich, 2011; Borremans, Rintala, & McCubbin, 2010). This is reflected in a higher prevalence of obesity in children with autism in comparison to age-matched children without autism; 30.4% compared with 23.6% (Curtin C, Anderson SE, Must A, Bandini L. 2010). Further research is needed to better understand differences in patterns of physical activity participation, and screen time, between adolescents with and without autism.

This article has three purposes; 1) to compare the physical activity participation of adolescents with and without autism, including participation in structured and unstructured activities; 2) compare the reasons proposed by the respondents for why they do not participate in team sports; and, 3) compare screen-time behavior between the sample with and without autism. Exploratory analyses are also conducted to examine the effect of gender, medication, co-morbidities and autism severity on levels of physical activity and screen time.

Method: The adolescents' physical activity was measured though self-report, using questions adapted from the leisure time questionnaire (Godin & Shepard, 1985); variables used in the analysis included participation in moderate to vigorous physical activity, and participation in structured and unstructured activities. To measure screen time behaviors, adolescents reported on time spent watching television, using the computer, and playing video games. Independent samples t-tests were used to compare physical activity and screen time participation between children with autism (n=62) and TD children (n=73). Moreover, exploratory analyses were completed, with data stratified by gender, parental education (earned a college degree or not), age of diagnosis, and weight status (IOTF BMI categories). All analysis were conducted using SPSS 23, with an alpha level at .05.

Results or Findings: Independent sample t-tests revealed participants with autism to spend significantly less time in moderate to vigorous physical activity in comparison to TD participants; $t(134) = -4.786$, $p < .001$. The participants with autism reported spending, on average, less than three days (M=2.9), per two weeks, participating in at least 20 minutes of moderate to vigorous physical activity. In contrast, TD participants reported being engaged in moderate to vigorous activity, on average, 3.76 days per two weeks. Similarly, participants with autism were involved in less team or individual sports (M=2.2), than TD participants (M=3.07); $t(134) = -3.776$, $p < .001$, and less organized activities (M=2.12) compared to the TD participants (M=2.81); $t(135) = -3.661$, $p < .001$. Screen time participation was not significantly different between participants with ASD and TD participants.

Conclusions or Implications: This research adds further evidence to the disparity in physical activity participation between adolescents with and without autism. In contrast to other research (for example Mazurek & Wenstrup, 2012), no differences were revealed between groups in screen time participation.

Re-imagining the Triad of Impairments: Phenomenologically Oriented Approaches to Understanding and Explicating Instructional/Relational Strategies for Participants with Complex ASD Profiles.

Maureen Connolly (Brock University), Elyse Lappano (Brock University)

Introduction: In this paper we describe how blending Straus' (2013) reimagined triad of impairments (fixity of focus, local coherence, private meanings) with the phenomenological strategies of bracketing and imaginative free variations (IFV) allows us to plan, implement, analyze, explicate and understand intense pedagogic and relational episodes between participants in a specialized individualized movement program and the students who work with them on a weekly basis. It is our contention that phenomenological attunement can be taught, practiced and improved and that this attunement, far from being esoteric or abstract, is deeply practical and embodied and allows for authentic pedagogic engagement between teachers and their complex learners.

Method: We base our descriptions in our recent foray into a specialized individualized movement program for three young adult males who typically require 1:1 or 2:1 support. For this reason, we constructed developmentally appropriate activities that we embedded in mundane movement as well as more deliberately constructed activity stations; further, we constructed these with the specific needs of the participants as the primary curricular impetus. Specifically we will describe and analyze three critical incidents that exemplify our use of Straus' re-imagined triad of fixity of focus, local coherence, and private meanings, combined with bracketing, IFV and phenomenological attunement: The Bite, The Copy Cat, The Voyeur.

Results or Findings: Each of these incidents involved intense embodied encounters between the participants, their instructors, and the program facilitators. The incidents revealed how participants used action plans, anticipatory sets, anxiety reduction, observation and functional-expressive

communication in novel and strategic ways. We also noted idiosyncratic forecasting signals that preceded intense episodes.

Conclusions or Implications: We plan to repeat the program again this summer so our findings will allow us to prepare our student instructors, plan relevant programming and continue to engage in reflective analysis of our programming and strategizing.

Acknowledgement of Research Support (Optional): We acknowledge the ongoing funding support of our programs from Niagara Recycling.

Yes, They CAN do that! Progressive Adaptive Physical Activity in a Station Based Movement Program for Teens with Complex ASD Profiles

Maureen Connolly (Brock University), Elyse Lappano (Brock University), Andra Lenius (Brock University), Brittany Hogan (Brock University), Hayley Morrison (University of Alberta)

Introduction: In this paper we describe our engagement in phenomenologically oriented, deeply attentive attunement to the bodies of participants in our movement programs for teens and young adults identified as being on the autism spectrum. While medicalized, diagnostic discourse categorizes our participants as ‘severe’ or ‘low functioning’, we choose to work with more nuanced and contextualized notions of complex embodiment, recognizing that ‘function’ is often a feature of ‘world sensing’ and problem solving in a particular context, from a particular embodied perspective. We have constructed these movement programs with the bodies of the participants as the leading clue and with imaginative free variations as a strategy for designing and including movement patterns and station design that do not conform to typical/traditional approaches to autism.

Method: We base the descriptions of our personalized APA programs in two adaptive activity programs for teens and young adults with ASD who typically require 1:1 or 2:1 support, and our focus in this presentation is on the programing and outcomes of three participants, two males and one female. One program runs Saturday afternoons, 2-5 pm from September to April; the other runs Thursday evenings, 6-8 pm, from May to August. Both use aquatic and gymnasium spaces. Our data sets include structured observations taken longitudinally, using Laban movement analysis and modified FMS protocols as both baselines and post session assessments. The data and analysis for this particular presentation are from the May- August 2015 program block and the September-April 2013-2016 program blocks for a total of 58 sessions.

Results or Findings: All three teens have shown marked improvement in gross motor skills, fitness and conditioning elements, choice making, functional-expressive communication and self-regulation.

Conclusions or Implications: Our descriptions and analyses will allow us to explicate how phenomenological strategies can contribute to meaningful and relevant movement and APA programming.

Acknowledgement of Research Support (Optional): The authors would like to acknowledge the ongoing funding support of Niagara Recycling/NEA.

Parents' Perceptions of Physical Activity in Youth and Adults with ASD

Alice M. Buchanan (Auburn University), Benjamin Miedema (Auburn University), Georgia C. Frey (Indiana University)

Introduction: Youth with ASD are reportedly less active than peers without ASD, but it is unknown if this trend continues into adulthood. Physical activity (PA) determinants in youth with ASD include parent encouragement, access to support, and more, but it is unknown if this continues into adulthood. As such, the purpose of this study was to examine parent perceptions of PA participation in their adult children with ASD.

Method: Three parent couples and five mothers (8 discrete families) were interviewed, with each interview lasting 1-2 hours. Four parents were from the Southeast U.S. and 7 from the Midwest U.S. One family had two children with ASD, thus we discussed a total of 9 individuals with ASD aged 15 to 42 years. The 15 year old was included in the analysis as part of the family with two children with ASD. One man with ASD lived independently, while all of the others lived with their parents.

Interviews were audio-recorded, transcribed, and analyzed by breaking the data down into units of meaning. We used constant comparison to identify themes. Care was taken to assure the integrity of the participants' perceptions. Following the identification of common themes we began the interpretation process.

Results or Findings: The themes were parent's efforts to keep children active, support services, engaging independently, and benefits of PA. All the parents encouraged their adult children to be active for varied reasons, such as to attenuate anxiety and avoid weight gain. Parents were concerned for the health and well-being of their adult children, and they took steps to ensure

opportunities for PA as evidenced by accessing supports and recognizing the benefits received.

Conclusions or Implications: Parents of adult children with ASD support PA participation and perceive that their children are active. Additional research is needed to determine if this population meets health-related physical activity guidelines.

Quartz Room B

Body Composition in Children Ages 1-3: Relationships with Physical Activity and Motor Development

Isabella Felzer-Kim (Michigan State University), Janet Hauck (Michigan State University)

Introduction: Significant disparities exist in obesity prevalence between the general population and those with developmental disabilities. Children with Down Syndrome, specifically, have a particularly high risk of developing obesity. Thus, the case for primary prevention in infancy and early childhood is strong. Physical activity (PA) and motor development interventions in infants and toddlers have shown promise in addressing this need. In those under 4, however, the basic relationships between physical activity (PA), motor development, and body fat have not been quantified with the best available methods. These relationships also have not been quantified in those with Down Syndrome, and thus the second part of our study will be to repeat these measures in that population.

Method: We assessed the motor development, PA level, and body fat of 11 typically developing children ages 1-3. PA was assessed using Actigraph accelerometry at the right hip for seven days with Trost's Toddler cut points to demarcate average minutes per day of sedentary, light, and moderate to vigorous PA. Motor development was assessed using the Bayley Scales of Infant and Toddler Development-III (BSID3). Body fat was assessed using a sum of subscapular, bicep, tricep, and suprailiac skinfold measurements.

Results or Findings: Controlling for age, gross motor development scores showed a negative correlation with average minutes per day spent in sedentary activity (r=-0.886, p=0.046). Gross motor scores showed a negative correlation with the sum of 4 skin fold measurements (r=-0.924, p=0.025). Fine motor

scores showed a positive correlation with average minutes per day spent in sedentary activity (r=0.900, p=0.038).

Conclusions or Implications: These results show that infants and toddlers who spend more time in sedentary PA, and those with poor gross motor skills, have higher body fat levels. These early associations provide further justification to start motor skill and PA interventions early in life. We expect to find similar relationships in infants and toddlers with Down Syndrome.

Acknowledgement of Research Support (Optional): Thank you to the Department of Kinesiology at Michigan State University, and the Michigan State University MD/PhD Program for research support.

Physical Literacy and Impairment: The Use of a Systematic Mapping Review to Identify Gaps in the Published Literature

Kyle Pushkarenko (University of Alberta), Janice Causgrove Dunn (University of Alberta), Allison Sivak (University of Alberta)

Introduction: As it is currently conceptualized, physical literacy (PL) rests on the assumption that its components and benefits are inclusive of all people (Whitehead, 2010). Despite this, understanding about how PL is demonstrated and developed within the context of impairment has been minimized by a lack of discussion through the published literature. As such, the inclusiveness of PL may be questioned and its pursuit holds the perception of being exclusionary, ableistic, and representative of individuals void of impairment (Goodwin, 2016). The purpose of the study was to examine the published research literature pertaining to PL in order to determine the extent to which impairment is addressed or considered.

Method: A systematic mapping review (Grant & Booth, 2009) was conducted. An inductive search strategy was devised in partnership with a resource specialist from the Coutts Education Library at the University of Alberta. An online search engine, seven electronic databases, and manual searches of journals were used to identify peer-reviewed publications on the topic of PL. Initial screening strategies, and the application of pre-determined exclusion/ inclusion criteria were used to refine all searches. Analysis consisted of data extraction via the use of keywords, and the arrangement of data to demonstrate thematic trends.

Results or Findings: Initial findings of the review indicated discussion within three main areas: (1) physical education and its relationship to PL; (2) fundamental movement skills as a foundation of PL; and (3) models of assessment determining PL progression and development. There were few instances where the literature included discussion or application of the topic in

the context of impairment, implying a lack of emphasis on inclusiveness and applicability to individuals living with impairment.

Conclusions or Implications: Further exploration of PL from a variety of perspectives, including those of disability or impairment, is warranted in order to provide support for the claims that PL is an inclusive concept.

Understanding and improving physical activity participation in children with intellectual and developmental disabilities

K. McLeod (University of Regina), A. Federink (University of Regina), S. Lautenslager (University of Regina), K.L. Staples (University of Regina)

Introduction: With 1 in 3 Canadian youth being overweight or obese and only 5% of children meeting the recommended 60 minutes of MVPA each day, inactivity is quickly becoming a contributing factor to the increased prevalence of obesity. Of greater concern is that children with intellectual and developmental disabilities (IDD) are more obese and less active. Barriers to participation have also been identified. The purpose of this study was to examine physical activity participation among 35 children (25 boys, 10 girls) with IDD, ages 7 to 12 years.

Method: Physical activity was measured over a 7-day period using ActiGraph GT3X accelerometers. The Children's Assessment of Participation and Enjoyment (CAPE) was used to examine participation outside of school.

Results or Findings: On average, children with IDD spent 29.23 minutes per day engaged in MVPA and no child met the recommendations for MVPA. Looking specifically at the physical activity category of the CAPE, children with IDD participated in an average of 3.5 out of 13 activities. However, participation in these activities averaged only once per month.

Conclusions or Implications: In order to improve participation among children with IDD, it is important to understand their current levels of PA within the narrow range of activities in which they participate. Based on these results, a weekly PA program was purposively designed to provide a structured opportunity for children with IDD to participate. The program focused primarily on the learning and practice of FUNdamental movement skills; however, activities to promote bouts of sustained MVPA were incorporated throughout.

By creating a fun environment, each child became physically stronger while also improving their competence and confidence performing a variety of movement skills in a variety of games and activities. This understanding will facilitate the provision of services, programs, and supports to improve participation and health outcomes among children with IDD.

Acknowledgement of Research Support (Optional): Special Olympics Canada

The Role of Interdisciplinary Interventions for Children with Disabilities: Physical Activity Programs for Children with Autism

Luis Columna (Syracuse University), Suzanna Rocco-Dillon (Texas Woman's University), Natalie Russo (Syracuse University), Kevin Heffernan (Syracuse University)

Primary issue(s) to be presented and discussed: Research indicates that children with Autism Spectrum Disorder (ASD) have very limited participation in physical activity opportunities including recreation and sport activities. This is due, in part, to a lack of inclusive or specially-designed recreational programming opportunities and facilities, as well as a lack of awareness and knowledge by parents on how and where their children can safely participate.

Session significance: A lack of physical activity in childhood increases risk for obesity, metabolic diseases (e.g., diabetes), and cardiovascular disease in adulthood. While these facts true for all individuals, they are particularly problematic for children and youth with ASD who have found to be 40% more likely to be overweight and obese compared to their typically developed peers (Curtin et al., 2010). As such, it is critical that physical activity opportunities for children with ASD and their families are increased and improved. It is also important that physical activity programs emphasize interdisciplinary collaboration with professionals from across disciplines as well as the parents of children with ASD. Through this interdisciplinary collaboration, physical activity programs can be made more inclusive and designed to meet multiple individual needs within one program (e.g., sensory, fitness, social, etc.).

Relation to conference theme: In alignment with the conference theme, this presentation will discuss a research program that utilizes an interdisciplinary approach to maximize physical activity opportunities for families of children with ASD. The interdisciplinary research team incorporates professionals from the fields of adapted physical education, physical education, exercise science,

special education, psychology, and communication to provide uniquely designed physical activity opportunities for children with ASD and their families.

Description of session:

This session will present a randomized control research-based program designed to maximize physical activity opportunities for families of children with ASD. This project recruited a cohort of 40 children/youth with ASD and their families (parents) to participate in educational and physical activities including sport.

Twenty families participated in the intervention program and 20 families served as a wait-list control group. Data was collected from the parents (e.g., interviews, surveys on physical activity levels and patterns, etc.) and the children (e.g., observations of social communication and sensory behaviors, measures of physical activity level, assessment of motor skills and cardiovascular health) across the intervention phase in a pre-post fashion to determine whether the program led to generalized improvements in each of these areas. The participants in the control group will be included in the intervention group in year two of the project.

Children and their parents were involved in age-appropriate, developmentally-designed, land-based and aquatic physical activities. Additionally, parents were provided with planned opportunities to engage in vibrant discussions with professionals and other parents of children with ASD. Five one-day workshops are offered to the participants during the one-year project: 1) sensory integration, 2) communication, 3) motor development, 4) aquatic exercise, and 5) sport opportunities (individual and team sport).

All workshops are designed to help parents learn about barriers to physical activity for children with ASD, and the knowledge and skills necessary to

increase physical activity levels for their child with ASD as well as the rest of the family.

Reference: Pan, C.Y, Tsai, C.L., & Hsieh, K.W. (2011). Physical activity correlates for children with autism spectrum disorders in middle school physical education. Research Quarterly for Exercise and Sport, 82(3), 491-498.

Amber Room A

Engaging in Physical Activity as a Support for Dual Diagnosis

Brenda Rossow-Kimball (University of Regina)

Introduction: Dual diagnosis refers to an individual living with an intellectual disability and a mental health diagnosis. Dual diagnosis manifests itself through physically aggressive behaviour towards oneself, others, and property. Daily activities, relationships, and educational, vocational, and residential supports are jeopardized. It is not uncommon for individuals with dual diagnosis to have lengthy stays in tertiary psychiatric care as community agencies are unwilling/ uneducated to provide supports.

Method: Narrative inquiry methodology (Clandinin & Connelly, 2000) helped to frame this research exploring the transition from tertiary psychiatric care to community living for a young man with dual diagnosis. The individual and his community caregivers were invited to create field texts consisting of oral/written annals and narratives of experience. Inquiring into the field texts, the researcher co-composed narratives of dual diagnosis with the participants.

Results or Findings: The community agency supporting the young man put relationship building at the core of individual-caregiver interaction, rather than on the ‘expert’ management of his space, time, belongings, and activities. During community ‘outings’ from the psychiatric ward, exercise was an activity that was offered by caregivers who viewed it as an opportunity to connect one-to-one with the individual. Working alongside the young man to enhance physical well-being, caregivers implicitly communicated their perception of him as valued, worthy, and engaging. Exercise appeared to help the individual manage emotional distress, and self-injurious and other dangerous behaviours diminished.

Conclusions or Implications: The caregiver role in supporting an individual with dual diagnosis in the community is significant; caregiver interest in physical activity is important when engaging people with intellectual disabilities in physical activity. When transition to community from tertiary care includes opportunities for physical activity, individuals may experience a more stable discharge and decrease their risk for readmission. Physical activity may be considered a resource for those who are desperately waiting for dual diagnosis supports in their communities.

Schizophrenia & Leisure: Time is of the Essence

Shawn Wilkinson (McGill University/Concordia University), William J. Harvey (McGill University/Douglas Mental Health University Institute), Karim Tabbane (McGill University/Douglas Mental Health University Institute)

Introduction: Relationships between leisure and the health of persons with MHP have not always been well understood. Since engagement in an active and healthy lifestyle may be essential for improved mental health and physical well-being of people with MHP; leisure is a key construct to explore for all persons with MHP, including individuals with schizophrenia. The central research question, which guided this research study, was: How do people with schizophrenia experience and understand leisure in their daily lives?

Method: A mixed-methods case study design investigated the complex relationships between leisure and persons with schizophrenia from the perspective of individuals with the disorder. The Leisure Satisfaction Measure and Leisure Motivation Scale were used to collect quantitative data while semi-structured interviews were conducted to collect qualitative data.

Results or Findings: Questionnaire results suggested the participants were moderately satisfied with their leisure and motivated to participate in individual leisure pursuits. Participants were much less motivated to engage in leisure for social reasons but were concerned about limited social interaction and expressed a desire to develop more healthy social relationships. Four main themes were identified through the qualitative analysis. The ‘search for normalcy’, ‘life can be cruel’, ‘I want to be fit and healthy’ and ‘leisure and life’ themes tell a unique story of the struggles and triumphs in leisure and health for persons with schizophrenia when recovering in the community. Participants spoke candidly about how serious physical and psychological health problems impact their ability to lead active daily lives. Participants also shared hopes and

dreams for the future and how they may engage in leisure to work towards improving their health and well-being

Conclusions or Implications: This investigation led to a better understanding of the complex relationships between leisure and the health of persons with schizophrenia which, in turn, should enable better engagement in healthy and active community leisure opportunities.

L.E.A.P.S. Leisure Education & Active Participation for Persons with Schizophrenia & Schizoaffective Disorder

Shawn Wilkinson, (McGill University/Concordia University), William J. Harvey (McGill University/Douglas Mental Health University Institute), Karim Tabbane, (McGill University/Douglas Mental Health University Institute)

Introduction: Mental health problems (MHP) affect the lives of a significant number of North Americans each year. Leisure engagement may provide physical, psychological, and social health-related benefits for persons living with MHP. However, leisure engagement may be dependent on the acquisition and development of leisure-related knowledge and skills that persons with MHP may not possess and may also need to relearn to adapt to the effects of their disability. Leisure education programs may provide opportunities for persons with schizophrenia and schizoaffective disorder to acquire leisure-related knowledge, attitudes and skills. These types of programs may play a significant role in enhancing the quality of life and social inclusion of people with severe MHP. Yet, approximately 80% of persons with schizophrenia and schizoaffective disorder have dropped out of active leisure and exercise programs within the first month.

Method: A qualitative case study design explored factors that impacted the participation in a 5-week leisure education program for 10 persons with schizophrenia and schizoaffective disorder. The intervention consisted of leisure education and recreation participation in the community. Three semi-structured audiotaped interviews were used over the course of the intervention to construct an in-depth picture of each participant’s leisure knowledge and factors that impacted program adherence

Results or Findings: Thematic analysis of the data suggested autonomy support, an awareness and understanding of leisure, and links to actual community leisure resources were key to participation. Participants enjoyed

engaging in community recreation but spoke about how a lack finances and resources often prevented them from engaging in community recreation routinely. Moreover, most of the participants spoke about a greater need for autonomy support in the community to help them to identify and fully engage in community recreation.

Conclusions or Implications: This study offers a unique qualitative perspective for the factors that may impact adherence to community-based leisure for people with schizophrenia and schizoaffective disorder.

Post-Rehabilitation Exercise Experiences after Severe Traumatic Brain Injury

Enrico L. Quilico, William J. Harvey (McGill University), Jeffrey G. Caron (McGill University), Gordon A. Bloom (McGill University)

Introduction: Traumatic Brain Injury (TBI) is a public health concern due to its growing incidence and resulting physical, cognitive, behavioral, and emotional consequences. Exercise may be a cost-effective method to alleviate some of the health burdens related to TBI. Yet, it is unclear how adults with severe TBI continue to exercise after formal rehabilitation programs cease. This qualitative study explored perceived facilitators and barriers to post-rehabilitation exercise for individuals with a severe TBI.

Method: Interpretive phenomenological analysis (IPA) was chosen to explore the post-rehabilitation exercise experiences of seven adult, male participants with severe TBI who no longer participated in formal rehabilitation programs. IPA was deemed as a suitable approach since the first author, who also has severe TBI, was able to lend his experiences and interpretative lens about exercise in the context of TBI. Two separate semi-structured interviews were held with participants to gather data about exercise experiences from pre-, during- and post-rehabilitation perspectives.

Results or Findings: Interviews were audio-recorded and transcribed verbatim for analysis. Four themes emerged. Impact of TBI addressed how TBI-related impairments affected the participants' ability to participate in activities of daily living. Personal development after TBI highlighted greater awareness, emotional development and emphasized the importance of accepting disability-related impairments. Facilitators and Barriers to Exercise identified available time, planning, resources and transportation as well as organization, support and motivation. Exercise after TBI revealed exercise habits, productive activity,

importance of exercise and perceived physical, social and psychological effects of exercise.

Conclusions or Implications: Participants suggested exercise improved TBI-related impairments linked with fatigue, cognitive functions and mood. The findings highlight the importance of post-rehabilitation exercise to assist social integration and combat the risk of depression. Future research should investigate Internet friendly technologies to support exercise participation, group exercise programs to reduce emotional difficulties, and exercise support directly following rehabilitation to assist with exercise transitions after rehabilitation ends.

Amber Room B

Barriers to and Opportunities for Creating Inclusive Environments for Children: Physical Educators' Perspectives

Matthew Patey (Memorial University), Eun-Young Lee (University of Alberta), Kyoung June Yi (Memorial University)

Introduction: Physical education (PE) is a critical aspect of promoting lifelong health and wellness. All children in Newfoundland and Labrador (NL) are formally introduced to PE throughout their first years of schooling. Children develop at varying rates with respect to physical and cognitive development. As well they all have varying levels of physical and cognitive abilities. This should be celebrated by having an inclusive PE program in all schools. When certain students are excluded from (directly or indirectly) taking part in their PE, it could cultivate an aversion towards PE and subsequently decrease the likelihood of these children living out a healthy lifestyle. However, due to the lack of empirical knowledge regarding early childhood inclusive PE, little is known about the complex mechanisms of creating inclusive environments. The perspectives of physical educators have not been fully seen when studying early childhood inclusive PE. This study aims to address the following questions in order to prioritize aspects for the future actions in the development and implementation of inclusive primary PE programs in NL, from the perspectives of PE teachers: (a) "what positive and negative factors influence the inclusive environments in a primary PE setting?" and (b) "what are the ways of creating, promoting, and maintaining inclusive environments in a primary PE setting?"

Method: The perspectives of three physical educators were identified while using a grounded theory approach. Data were collected through face-to-face semi-structured interviews and analyzed using NVivo 10 software. An ethics

approval certificate was granted from the Institutional Review Board and informed consent from the key informants were obtained.

Results or Findings: Perceived positive and negative factors contributing to the creation of inclusive environments were identified. Positive factors were (1) self-driven education, (2) creative and innovative program delivery, and (3) specialized equipment. Negative factors were (1) lack of resources, (2) inaccessible built environments, and (3) inadequate teacher education. The participants also suggested practical strategies for future policies and actions to create inclusive environment.

Conclusions or Implications: Results from this study would: (1) offer empirical evidence of inclusive environments within primary PE; (2) empower other physical educators to reflect on barriers to and opportunities for creating inclusive environments.

Self-Efficacy of Physical Education Teachers in Including Students with Cerebral Palsy in Regular Classes

Yeshayahu Hutzler (The Zinman College of Physical Education and Sport Sciences/Wingate Institute), Sharon Barak (The Edmond and Lily Safra Children's Hospital/The Chaim Sheba Medical Center)

Introduction: Children with Cerebral Palsy (CP) are often included in regular classes, but lack the degree of physical education participation expected according to the Convention on Rights of Persons with Disabilities. The purposes were to assess (a) effects of demographic background factors on teachers' self-efficacy (SE) toward teaching students with CP in physical education (PE), and (b) the effect of degree of mobility disability on teachers' SE.

Method: A questionnaire was constructed to measure SE toward inclusion of three mobility categories of students with CP: walking and running without assistive devices, walking with assistive devices, and using a wheelchair for mobility. 121 teachers from different parts of Israel with a mean age: 41.02 + 9.33 years (range: 25.00-59.00), and a mean teaching experience: 15.97 + 9.76 years (range: 0-39).

Results or Findings: (a) Scales for all three mobility categories demonstrated strong internal consistencies with good to excellent Cronbach's α ranging 0.87-0.94, (b) There was no correlation between teachers' age or experience and SE; (c) significant weak to moderate correlations were found across mobility categories with r ranging 0.39 – 0.68 (d) significant differences consisted between SE toward teaching students who use mobility assistive devices or wheelchairs compared to those who walk and run unaided ($p<.0005$); (e) The SE toward including children who are not able to walk and run unaided was significantly influenced by having specialized training in adapted physical education.

Conclusions or Implications: This study demonstrates the lack of confidence in including students who are unable to walk and run regularly in PE. Specialized training in this particular area seems needed to increasing teachers' SE.

The Socialization of Preservice Adapted Physical Education Teachers

Wesley J. Wilson (University of Virginia), K. Andrews Richards (University of Alabama), Luke E. Kelly (University of Virginia)

Introduction: Over 40 years of research has examined individuals' socialization into the physical education profession. This literature examines the processes through which individuals are recruited into, trained for, and socialized through the profession. However, few studies have extended this framework to the socialization of adapted physical educators. Preservice professionals may be attracted to adapted physical education for different reasons, and may have different experiences in teacher training than those entering general physical education. The purpose of this study was to better understand why individuals entered an adapted physical education program and their experiences in that program.

Method: Participants included 7 preservice graduate students (2 males, 5 females) pursuing master's degrees in adapted physical education. Qualitative data were collected across a 12 month period focusing on field experiences. Data sources included two semi-structured interviews (middle and end of program), one focus group interview (final semester), two field observations of the participants' teaching, and reflective journals maintained by participants. Data were analyzed using analytic induction and constant comparison with occupational socialization theory serving as a guiding lens.

Results or Findings: Participants were found to have entered the program because they enjoyed sports and physical activity, but also had a strong connection to children with disabilities. Field observations confirmed participants' ability to apply strategies learned through coursework in real world settings. Building relationships with students with disabilities through fieldwork was a particularly powerful source of socialization. Participants experienced challenges as they navigated relationships with parents and worked with

individualized education programs (IEPs). However, fieldwork ultimately served to reinforce their motivation for working with children with disabilities in physical activity settings.

Conclusions or Implications: Results illustrate some similarities and differences in the socialization experiences between general and adapted physical education preservice professionals. Experience with children was an important element of the participants' socialization and helped reinforce their motivation to enter the field.

An Examination of Students with Severe Disabilities in Physical Education

Michelle Grenier (University of New Hampshire)

Introduction: Current estimates are that 96% of students with disabilities participate in some form of inclusive education. Research also reveals the performance gains of students educated within inclusive settings. This research investigated the communicative behaviors between students with severe disabilities and their peers in elementary physical education. The research also examined the teacher practices that fostered communicative behaviors.

Method: Observational field notes on one 2nd and 4th grade inclusive physical education class were conducted that included children with severe disabilities. Focus group interviews were conducted on students without disabilities and semi-structured interviews were done on the physical education teacher, physical therapist, occupational and speech therapists, paraprofessional and classroom teachers. The physical education teacher also kept a journal. The data from three primary sources—field notes, journal and interviews were analyzed to address questions of interest. To identify common threads that extended throughout the data, an inductive thematic analysis was utilized.

Results or Findings: The analysis revealed three primary themes. The first, Collaboration – Needing to Know What I Don’t Know highlighted the need for collaborative practices for all stakeholders to gain the necessary expertise to “uncode” students’ communicative patterns. The creation of a communicative dictionary familiarized students with mutually reinforcing behaviors. The second theme, Community in the Classroom, involved the teachers’ emphasis on building community to insure that everyone belonged and had a contributing role in the class. Teachers’ modeled specific behaviors for students to appropriate the skills needed to effectively communicate. The third theme, All the Eyes Can See highlighted the communicative process and shared

language of the students. The perceived agency of the children with significant disabilities emerged within the context of a physical education program due to the particular kinds of relations and social arrangements that were created between students.

Conclusions or Implications: The supports within the classroom made it possible for the students to access to the physical education program. Collaboration of key stakeholders and a desire on the part of the educators to move their students' learning experiences beyond a place to an educational environment was essential for creating communicative opportunities. In effect, a broadened application of inclusive practices was developed.

Prism Room

Psychometric Properties of Smart Start-2 for Preschoolers with and without a Disability

Jaehun Jung (Oregon State University), So-Yeun Kim (Northern Illinois University), Laurie Zittel (Northern Illinois University), Marilyn Looney (Northern Illinois University), Myung ha Sur (Northern Illinois University), Seok Heon Kang (Northern Illinois University).

Introduction: Fundamental movement skills (FMS) are crucial for children in early childhood because children use these skills to interact with and respond to environmental challenges. Preschoolers with a disability may have difficulty acquiring the motor skill competency necessary to perform FMS, thus putting them at risk for physical, social, and emotional development delay. To maximize benefits of instructions to develop FMS, accurate assessment of FMS is essential for preschoolers with a disability. Smart Start-2-Second Edition (Smart Start-2), a curriculum-based and criterion-referenced instrument, was developed to assess FMS for preschoolers with all abilities. However, there is limited information regarding validity and reliability evidence of Smart Start-2. Therefore, the purpose of this study was to investigate validity and reliability evidence of Smart Start-2 in preschoolers with/without a disability.

Method: A total of 60 preschoolers (aged between 37 to 64 months) with/without a disability participated in this study. Using Smart Start-2 and Test of Gross Motor Development-Second Edition, three raters examined 12 FMS of 32 preschoolers with a disability and 28 preschoolers without a disability twice.

Results or Findings: A large correlation between total scores of the two instruments was found, $r = .89$, $p < .01$. Across three raters, the average proportions of agreement, modified kappa coefficients, and intraclass correlation coefficients (ICCs) for intra-rater reliability using Smart Start-2 on all

participants were .92, .83, and .96, respectively. For inter-rater reliability, the average proportions of agreement, modified kappa coefficients, and ICCs for inter-rater reliability on all participants were .86, .71, and .93, respectively.

Conclusions or Implications: The major findings of this study support evidence of concurrent validity and intra- and inter-rater reliability of the Smart Start-2 for assessing FMS for preschoolers with/without a disability.

Validation of the Children's Intentions to Play with Peers with Physical Disabilities in Middle-School Physical Education

Iva Obrusnikova (University of Delaware), Suzanna Rocco-Dillon (Texas Women's University), Timothy D. Davis (SUNY Cortland)

Introduction: Research suggests that intentions of students without disabilities play a critical role in the inclusion of students with disabilities in general physical education (GPE) (Block & Obrusnikova, 2016). To date, the only scale developed and validated to measure the intentions of students without a disability to play with a hypothetical peer with a physical disability in GPE is the Children's Beliefs and Intentions to Play with Peers with Disabilities in Middle School Physical Education (CBIPPD-MPE) (Obrusnikova et al., 2011). The scale was developed using the Theory of Planned Behavior (TPB; Ajzen, 1991). Even though it went through a series of validation studies, it only includes indirect measures of intention (i.e., behavioral, normative, control beliefs) and fails to include the direct measures of intention (i.e., attitudes, subjective norm, perceived behavioral control). Therefore, the purpose of this study was to (a) revise the CBIPPD-MPE to include the direct measures of intention and (b) provide evidence of the scale's structural validity and internal consistency.

Method: A background questionnaire and the CIPPD-MPE were administered to two convenience samples of middle school students: (a) a pilot sample (n = 251, 67% girls) and (b) a validation sample (n = 258, 42% girls). The direct measures items were the standard measures recommended by Ajzen (2006). They were modified for middle school children based on other research instruments used with similar population.

Results or Findings: Exploratory factor analysis on the pilot sample confirmed the seven TPB factors, which collectively explained 68% of the total variance. This variance is larger than the variance in the four-factor CBIPPD-MPE (58%).

Internal consistency of the seven subscales ranged .75-.96. All subscales were inter-correlated and significantly correlated with intention ($p < .01$). Attitudes toward the behavior had the strongest correlation with intention ($r = .69$).

Conclusions or Implications: The current study provides evidence of structural validity and internal consistency of the revised CIPPD-MPE scale.

Hierarchical Linear Modeling: Introduction and Implication in Adapted Physical Education/Activity Research

Wei-Ru “Andy” Yao (Georgia State University), Deborah Shapiro (Georgia State University)

Introduction: Hierarchical linear modeling (HLM), also known as multilevel modeling or nested modeling, is a type of regression analysis for multilevel data. Research has consistently demonstrated that people within a particular group or context tend to be more similar to each other in terms of an outcome variable than they are to people in a difference group or context. However, standard statistical techniques like linear regression or analysis of variance do not take into account these dependencies, and results obtained by these methods tend to be biased. Conducting a HLM analysis can help researchers account for the homogeneity within groups allowing for a greater understanding of how group-level effects can impact research outcomes. The purpose of this presentation is to introduce the basic concept of the HLM, and how, using an example from APA, this statistical technique can be applied in the area of adapted physical activity research.

Friday, September 23nd, 10:55 - 11:55 a.m.
Concurrent Research Sessions

Amber Room A

Youth Sport and Disability: A Fundamental Contradiction?

Nancy Spencer-Cavaliere (University of Alberta), Jennifer Thai (University of Alberta), Bethan Kingsley (University of Alberta)

Introduction: Sport and disability emphasize physicality in varying and often contradictory ways. Despite the focus on inclusion, as a culture that celebrates precision of normative/hegemonic movement, sport can present as a site of exclusion for many youth who experience disability. "How can or does youth sport reconcile what would seem to be a fundamental contradiction?" (Fitzgerald, 2009, p.2). In this study, we examined how this question of fundamental contradiction exists within the experiences of sport practitioners of segregated and integrated youth sport. The overall purpose was to generate knowledge of how to navigate, challenge, and change the landscape of sport for youth who experience disability.

Method: The study was guided by qualitative and interpretive description. Data were generated through interviews with 15 coaches from a variety of sport settings and reflective notes.

Results or Findings: The study findings are presented thematically: a) (dis)ability and expectations, b) a part of and apart from, and c) possibilities?

Conclusions or Implications: Among the myriad of challenges to making youth sport inclusive, one of the most complex is the nature of sport itself and the ways in which it contradicts the construction of disability. The dichotomy of experiences shared by practitioners in coaching youth who experience

disability highlight the importance of self-reflective and knowledgeable coaches. Implications include the need to disrupt and re-imagine the meaning of youth sport and disability.

Perceptions of Athletic Identity for Athletes with Spina Bifida

Emily Gilbert (Dundee Central School District), Douglas H. Collier (The College at Brockport, State University of New York), Lauren Lieberman (The College at Brockport, State University of New York)

Introduction: Although the athletic identity (AI) of an individual is closely related to long-term participation in sport, little research has been done in this arena with athletes with spina bifida (SB). The current investigation examined the actual AI of athletes with SB as well as their parents and coaches perception of the athlete's abilities. Additionally, factors that influenced the development of AI for athletes with SB were studied. Given an extremely low participation rate in athletics for people with physical disabilities, a better understanding of facilitators and barriers is of paramount importance.

Method: Participants included three distinct groups: athletes with SB (5), parents (5), and coaches (2). The participants were recruited from two adapted sports programs in Western NY and were between 15 and 25 years of age. Data were collected in four ways: a demographic questionnaire, the Athletic

Identity Measurement Scale, individual semi – structured interviews and field notes. Regarding content validity, the interview questions were reviewed by a panel of experts in questionnaire design. Qualitative data were analyzed through developing categories and examining them for common elements. Themes were extracted from these categories and data were then selectively coded.

Results or Findings: Principal findings indicated the majority of participants identified strongly as athletes – especially when contrasted with other aspects of their lives. Barriers to both sport participation and the development of a strong AI included functional issues around appropriate equipment, adequate transportation and program availability. Parental and coaching involvement

was seen as potentially empowering or counterproductive, depending upon highly individual circumstances. Participants with SB noted that shared experiences, social support and exposure to appropriate role models resulted in positive feelings toward disability-specific sport opportunities.

Conclusions or Implications: Although the participants identified as athletes, functional and social barriers to participation must be addressed. Further investigation should, as well, contrast the potential benefits of integrated versus segregated sport programs with regard to both sport participation and the development of AI.

Acknowledgement of Research Support (Optional): I would like to acknowledge the support I have received from my committee members, in particular, my thesis chair Dr. Douglas Collier. I would also like to thank the participants as well as the extended faculty of the Kinesiology, Sports Studies & Physical Education department. Finally, I would like to thank The College at Brockport - SUNY for awarding me the Distinguished Professor's Award.

Impact of Perceived Motivational Climate, Self-Efficacy and Enjoyment on Effort among Youth Wheelchair Basketball Athletes

Deborah Shapiro (Georgia State University), Wei-Ru "Andy" Yao (Georgia State University)

Introduction: Through participation in a quality sport experience, children and youth with physical disabilities can enhance their physical and psychological well-being, facilitating sport engagement and intentions toward continued participation. These benefits are dependent, in part, on the influence exerted by social-environmental factors (e.,g. coach) and an individual's perceptions or interpretation of their experiences within that sport context. Using Achievement Goal Theory and Self-Determination Theory, this study examined how perceptions of the motivational climate predicts perceived competence, enjoyment and effort towards participation in wheelchair basketball among youth with physical disabilities.

Method: Participants were 23 youth with physical disabilities (Mage =16, SD =2.1) recruited from two wheelchair basketball programs in a large metropolitan city. Participants completed the Perceived Motivational Climate in Sport Questionnaire-2, a wheelchair basketball self-efficacy scale, and the Physical Activity Enjoyment Scale. Behavioral investment/effort was assessed using heart rate monitors worn over three practices each lasting 1 ½ - 2 hours. Data were analyzed using descriptive statistics, ANOVA, Pearson Correlation, and path analysis.

Results or Findings: Results indicated no significant gender or program differences in perceptions of the motivational climate, basketball self-efficacy, enjoyment or heart rate. Participants across all programs and gender reported a predominantly mastery oriented motivational climate (M=4.5/5, SD =.42), positive perceptions of basketball self-efficacy (M=7.1/10, SD=1.2), and overall enjoyment for playing wheelchair basketball (M=4.6/5, SD=.21). Maximum

average HR ranged from 206-220bpm (M=213, SD=13.65). No significant relationships were found between motivational climate, competence, enjoyment and average max HR. A significant predictive relationship (B=5.27, $p<.05$) was found between basketball self-efficacy and average maximum HR.

Conclusions or Implications: Behavioral investment in sport was best predicted by perceived basketball self-efficacy. While the conceptual models of achievement goal theory and self-determination theory apply in this adapted sport setting, the long term engagement of athletes and their respective coaches in wheelchair basketball may have impacted the theoretical relationships outlined in achievement goal and self-determination theories. The sample and uniqueness of the adapted sport setting will be addressed as it informs the results and future research directions.

Amber Room B

The Physical Activity Patterns in Infants with and without Down Syndrome

Dale A. Ulrich (University of Michigan), Leah Ketcheson (University of Michigan), Andrew Pitchford (University of Michigan), Hyun Jin Kwon (University of Michigan)

Introduction: Childhood obesity has reached alarming proportions. In the United States, almost 10% of children less than 2 years of age are overweight. Most concerning is that individuals with intellectual disabilities are at a greater risk for obesity than their typically developing peers. One factor contributing to an early onset of overweight and obesity in both populations are low levels of physical activity (PA). Examining PA during infancy is critical, as it may lend support for interventions promoting activity patterns early on in development. However, to date, little is known regarding PA during infancy in either population.

Method: The purpose of this study was to examine the PA patterns in thirty-three infants aged 1 – 12 months (all pre-walkers) using Actigraph GT3X+ (at the wrist and ankle) in typically developing infants and infants with Down syndrome (DS).

Results or Findings: Descriptive statistics revealed no significant differences in demographic variables ($p > .05$) between groups. Typically developing infants ($n = 22$), were 39% male, with a mean age 6.26±3.63 mo., and a ponderal index (PI) of 27.18±3.79. Infants with DS ($n = 11$), were 55% male, with a mean age 7.72±3.55 mo. and a PI of 26.89±3.40. An analysis of covariance (ANCOVA) controlling for wear time was conducted to determine group differences in PA across the week for the wrist and ankle. No between group differences were found when examining the counts per minute averaged

across the week at the ankle [F (1, 31) = .128, p = .723, partial n^2 = .004)] or wrist [F (1, 30) = .006, p = .941, partial n^2 = .000)].

Conclusions or Implications: This study represents one of the first objective measurements of PA during infancy in both typically developing infants and infants with DS and is an important first step in establishing baseline PA patterns which characterize both groups.

The Impact of an Early and Intense Prone Positioning Program on Motor Development in Infants with and without Down Syndrome

E.E. Wentz (The University of Michigan), Dale A. Ulrich (The University of Michigan), Janet Hauck (Michigan State University)

Introduction: Early motor development impacts global development and physical activity (PA). The likelihood of delayed motor development, decreased PA, and decreased participation in persons with Down syndrome (DS) is recognized, yet little is known about reducing these delays. This research aimed to explore differences in motor development in infants with and without DS as a result of a 'tummy time' intervention.

Method: Thirteen infants with typical development (TD) and 19 with DS participated in daily 'tummy time' until they could independently transition in and out of sitting. Motor development was assessed regularly from study entry (0 to 20 weeks of age) through age 18 months. Historical data from 34 infants, 25 TD, 9 with DS, that did not engage in formal 'tummy time' were available. Motor development was compared between the intervention and historical groups for infants with and without DS.

Results or Findings: Linear mixed modeling, survival analyses and effect size computation supported the benefits of 'tummy time' on motor development. 'Tummy time' positively impacted the motor trajectories of TD infants ($p = .002$) and infants with DS ($p = .031$). 'Tummy time' TD infants achieved unilateral reaching ($p < .001$), pincer grasp ($p < .001$), block stacking ($p < .001$), sitting to play with toys ($p = .004$), four point crawling ($p < .001$), standing alone ($p < .001$) and walking alone ($p = .001$) significantly earlier than non-'tummy time' peers. 'Tummy time' infants with DS achieved unilateral reaching ($p = .001$), pincer grasp ($p = .018$), block stacking ($p = .046$), rolling supine to prone ($p = .043$), and sitting to play with toys ($p < .001$) significantly earlier than non-'tummy time'

counterparts. A large effect (d >.8) of ‘tummy time’ was noted for motor development in infants with and without DS.

Conclusions or Implications: ‘Tummy time’ supported motor development in infants with and without DS and should be promoted by infant practitioners.

Comparing Upper Limb and Bilateral Coordination of Age and Sex Matched Adolescents With Intellectual Disabilities Without Down Syndrome

E. Michael Loovis (Cleveland State University), Ruth Ann Miller (Wichita State University), Ken Pitetti (Wichita State University)

Introduction: The Bruininks-Oseretsky Test of Motor Proficiency (BOT-2) established sex specific norms that represent typical differences in motor development between adolescent males and females for balance, upper limb coordination (ULC) and bilateral coordination (BLC) within the general population. A recent study, based on BOT-2 test items, of adolescents with intellectual disabilities (ID) reported that males tended to have better balance than females. The purpose of this study was to determine whether or not sex differences also existed for ULC and BLC in adolescents with ID.

Method: A total of 149 male and 96 female adolescents (12-17 yrs) with ID but without Down syndrome (DS), matched in age, participated in this study. The larger number of male participants reflects the higher incidence of ID among males, with males having a 1.5-fold greater prevalence. Six ULC items (dropping and catching ball-one/two hands; catching tossed ball—one/two hands; and dribbling ball-one/two hands) and six BLC items (touching nose with finger; jumping jacks; jumping in place same/opposite sides synchronize; and tapping feet and fingers, same/opposite side synchronized) from the BOT-2 were used to evaluate coordination. A minimum of 10 assessments in each age group for each gender was required for data analysis.

Results or Findings: For all test items in all age groups, no significant ($p<.05$) differences were found between genders. When compared to criterion scores established by the BOT-2 for the general population, 67% of the mean scores seen in this study were below criterion.

Conclusions or Implications: Although preliminary, results indicate no sex differences for ULC and BLC exists for adolescents with ID. However, there was large variation in number of assessments per test item (males =39-66; females = 10-15). More female assessments are needed to substantiate this finding. Measurement of BOT-2 motor skills is also needed for children with ID, and for males and female youth with Down syndrome.

Acknowledgement of Research Support (Optional): We would like to thank the children, teachers, and staff at The Arc of Sedgwick county, Wichita, Kansas, and the Newton School District, Newton, Kansas.

Prism Room

Influence of Water Depth on Energy Expenditure During Aquatic Walking in People Post-Stroke

Hyosok Lim, Yumi Kim, Daniel Azurdia, Teri Todd, Ovande Furtado,Taeyou Jung

Introduction: The effectiveness of aquatic walking on cardiovascular fitness has been well documented. However, the influence of water depth during aquatic walking on the cardiorespiratory functions, particularly among people post-stroke, is unknown. This study aimed to investigate the influence of different water depths on physiological responses during aquatic walking in people post-stroke.

Method: Six participants post-stroke have completed the six-min walking at a matched speed in three different conditions: overground, thigh-depth and chest-depth water. Energy expenditure (EE), oxygen consumption (VO2), and minute ventilation (VE) were measured by using a telemetric metabolic system. Data were collected on three separate visits, which were separated by at least 48 hours. On the first visit, all participants were asked to walk in chest-depth water as fast as they could, and the walking speed was later used as a matched speed for other walking conditions. The order of walking conditions was randomized.

Results or Findings: Repeated measures ANOVA showed significant differences in EE and VO2 among three walking conditions. Post-hoc revealed significant increases in EE and VO2 during thigh-depth water walking as compared to overground. In addition, a trend of decreases in all variables was noted as the water depth increased from the thigh to chest levels.

Conclusions or Implications: Water resistance against the leg movements appears to increase energy expenditure when walking in thigh-depth water as

compared to overground. When walking in the chest-depth water, people post-stroke may benefit from greater weight support by increased buoyancy, which can result in reduction of energy expenditure. These findings provide scientific understanding of the influence of water depth on physiological energy cost of aquatic walking and should be considered for delivering an evidence-based aquatic intervention.

Predicting Energy Expenditure and Intensity of Youth Wheelchair Basketball: A Pilot Study using Accelerometry

Michele Olson (The Ability Sport Network at Huntingdon College and Auburn University, Montgomery), Holly Clarke (The Ability Sport Network at Huntingdon College and Auburn University, Montgomery), Lisa Olenik-Dorman (The Ability Sport Network at Huntingdon College and Auburn University, Montgomery), Jared Rehm (The Ability Sport Network at Huntingdon College and Auburn University, Montgomery)

Introduction: Physiological demands of wheelchair basketball in youth have received little attention and, where data are available, they pertain to adult, elite wheelchair basketball athletes. Therefore, the purpose of this pilot study was twofold: Determine the utility of using accelerometry in recording the amount of activity in youth participating in wheelchair basketball via the Ability Sport Network (ASN) Grant. Second, to predict energy expenditure during a typical practice and game simulation sessions.

Method: Six males (mean age = 14 yrs; mean mass = 54.8 kg), with consent provided by parents or legal guardian, served as pilot subjects. Accelerometry was employed during twice-weekly 2-hr practices. Specifically, Actigraph GT3X-BT accelerometers (small, wristwatch like devices) were placed on the non-dominant wrist (Garcia-Masso et al 2013). Throughout each 2-hour practice session, distance was recorded by the accelerometers. The distance was then used to calculate energy expenditure.

Results or Findings: The Actigraph GT3X-BT accelerometery method was found to be viable. There was no movement obstruction or failure of the employed technology. Second, the average estimated energy expenditure during practice was 284.2 calories. Predicted VO2 equated to 6.0 METS. With respect to the “General Classification of Intensity” system, 6.0 METS is classified as “Vigorous” (CDC and ACSM).

Conclusions or Implications: This study predicted the energy expenditure in intensity of youth wheelchair basketball. Next steps require metabolic measurement of oxygen use: Oxygen use is the criterion for verifying accelerometry-predicted energy cost and intensity. Validation protocols will provide the needed practice and training specificity for youth wheelchair basketball participation.

Acknowledgment of Research Support (Optional): Partnership: Ability Sport Network (ASN) and Auburn University Montgomery

Differential Effects of Assisted and Voluntary Cycling on the Relationship between Improvements in Cardiorespiratory Fitness and Executive Function in Adolescents with Down Syndrome

Simon D. Holzapfel (Arizona State University), Shannon D. R. Ringenbach (Arizona State University), Megan R. Cook (Arizona State University)

Introduction: The relationship between cardiorespiratory fitness (CRF) and cognitive function in the general population is still disputed. Even less is known about this relationship in persons with Down syndrome. We sought to investigate the effects of two modes of cycling exercise on CRF in persons with Down syndrome and whether changes in CRF would predict changes in executive function. We also investigated whether the type of cycling intervention moderated the relationship between changes in CRF and changes in executive function.

Method: Forty-nine adolescents with Down syndrome were allocated to either 8 weeks of stationary motor assisted cycling therapy (ACT), voluntary cycling (VC), or no cycling (NC). The six minute walk distance was used as the measure of CRF.

Results or Findings: The Six minute walk distance increased from pre- to post-testing in the ACT group ($t(16) = 2.59$, $p = 0.020$). No statistically significant change occurred in the VC ($t(15) = 1.90$, $p = 0.077$) and NC groups ($t(15) = 0.29$, $p = 0.778$). Changes in six minute walk distance predicted changes in executive function only in the ACT group ($\beta = 0.65$, $F = 11.08$, $p = 0.005$). Thus, the intervention moderated the effects that changes in CRF had on changes in EF ($\beta = -0.307$, $t = -2.70$, $p = 0.010$).

Conclusions or Implications: This is the first study to investigate the relationship between changes in CRF and changes in executive function in persons with Down syndrome. The results suggest that CRF is important for cognitive

function in persons with DS, however, the improvements in the six minute walk test performance and executive function may both be due to underlying neurological improvements in cortical and subcortical areas.

Acknowledgement of Research Support (Optional): NICHD 5R03HD073652-02

Friday, September 23rd, 2:00 - 2:40 p.m.
Concurrent Building Sessions

Quartz Room B

Understanding the Para Sport Pathway: Focus on Participation

David Legg (Mount Royal University), Colin Higgs (Memorial University), Mat Dowling (University of St. Mark and St. John)

Primary issue(s) to be presented and discussed: The vision for the International Paralympic Committee is ‘To enable para-athletes to achieve sporting excellence and inspire and excite the world.’ Incumbent within this is having a firm understanding of the various elements that could impact a person with disability being physically active, pursuing sport and ultimately becoming a high performance athlete.

A model that has attempted to create such an understanding in the able bodied sport system is known as SPLISS (Sport Policies Leading to International Sporting Success). To date, however, nothing has been created within a disability context.Two Doctoral students, being led by the lead author of the SPLISS approach, however, are attempting to do so.

Within the larger SPLISS approach is recognition that participation is a key pillar. This is likely also the case in a Paralympic context although perhaps with many unique qualifiers.

It is this area that the International Paralympic Committee’s Sport Science Committee is particularly interested identifying ‘determinants of Paralympic participation’ as one of three key research projects. Guiding the pursuit of this understanding is the unpublished and still evolving Legg-Higgs Model of Enablers / Barriers to Participation in Disability Sport.

In this model the authors propose that enablers are divided into: disability sport knowledge / access to coaching, facility and transportation structure, and cultural attitudes and beliefs about the nature and meaning of disability. This model is being tested in focus groups this spring in a range of cultural contexts, to better understand why persons with disability are, or are not, participating in physical activity.

Session significance: In this presentation the Legg Higgs model will be presented along with how the evolving understanding of participation could fit within a broader understanding of sport development pathways. The Legg Higgs and larger Para SPLISS models are still evolving and this symposium will allow attendees to learn about an international research program and provide input and advice as to how it can best reflect the adapted physical activity paradigm.

Relation to conference theme: The 2016 conference theme is Revisiting our Research Assumptions 20 Years On: The Role of Interdisciplinarity. Guiding the understanding of enablers to participation is a commitment to a multi-disciplinary approach including those from the social sciences, sport management and sport development.

Description of session: - Overview of current state of para SPLISS research

- Overview of the Legg-Higgs model
- Overview of current state of IPC participation research
- Opportunity to discussion and debate regarding the two models

Reference: Sheilds, N. & Synnot, A. (2016). Perceived barriers and facilitators to participation in physical activity for children with disability: a qualitative study, BMC Pediatrics: 16:9.

Amber Room A

Salient Research Questions Related to Physical Activity and Autism Spectrum Disorder

Michaela A. Schenkelberg (University of South Carolina), Kristi Menear (University of Alabama at Birmingham), Megan MacDonald (Oregon State University), Emily Bremer (McMaster University)

Primary issue(s) to be presented and discussed: The goals of this workshop are to summarize the current published research topics related to physical activity and individuals with autism spectrum disorder (ASD) and to identify salient research questions that could guide the field in the immediate future.

Session significance: Many studies have demonstrated the effects of physical activity on maladaptive behaviors, academic performance, and overall health and development of individuals with ASD. Due in part to the positive effects of physical activity interventions, research in this field is rapidly growing among various disciplines including special education, psychology, motor development, and public health. However, large gaps in the literature remain. For example, little is understood about the effects of individual-level physical fitness, motor development, or severity of ASD on patterns of physical activity. Further, best practices for physical activity promotion have yet to be established. Identifying the current knowledge base and future directions via a building session gives opportunities for interdisciplinary group discussions and the potential for collaborative lines of inquiry.

Relation to conference theme: Our proposed building session is an ideal fit for this year's conference theme, Revisiting our Research Assumptions 20 Years On: The Role of Interdisciplinarity. Our presenters consist of doctoral students and distinguished faculty members from four universities with backgrounds in Public Health, Kinesiology, Adapted Physical Activity, Health Promotion,

Physical Education, and Special Education. Additionally, we anticipate fruitful discussion which will cross disciplines.

Description of session: 1) The four presenters will summarize existing literature on physical activity topics including aspects of physical activity (e.g., physical fitness, motor skills, physical activity interventions), and benefits of physical activity as it relates to individuals with ASD; 2) Based on existing literature proposed research questions will be suggested; 3) After the presentation of questions, there will be ample time for discussion and debate about the proposed research questions in order to receive feedback from the audience and brainstorm other potential questions; 4) Finally, the presenters of the building group will revise salient research questions and develop a manuscript to be submitted for publication with the goal of providing direction in the field of physical activity and ASD.

Reference: Bremer, E., Crozier, M., & Lloyd, M. (2016). A systematic review of the behavioural outcomes following exercise interventions for children and youth with autism spectrum disorder. Autism: The International Journal of Research and Practice. http://doi.org/10.1177/1362361315616002

Amber Room B

APE Teacher Certification: Inter- and Intra-Individual US State Variability

Terry Rizzo (California State University), William J. Harvey (McGill University), Geoff Broadhead (Kent State University)

Primary issue(s) to be presented and discussed: The variability which exists in APE Certification between and within two US States. Can extreme variability undermine consistency and quality in teacher preparation, and thus in APE teacher service delivery?

Session significance: By presentations and discussion, issues concerning APE teacher Certification in two US States will be highlighted.

Relation to conference theme: A basic assumption is that delivery of effective school programs for individuals with disabilities should be subject to some scrutiny, in order to ensure quality and consistency. Thus the extent to which two US States differently determine specific APE teacher preparation is an issue of concern.

Description of session:

US Federal and State legislation as context.

State certification criteria in two US States: between-State variability.

The content of two un-named, approved California university programs will be contrasted against State Performance Standards.

Within-State variability will be shown.

When differences in credits and time needed to meet each Standard are examined.

Observations from the Canadian perspective.

Audience Q & A

Reference: PL 108-02, the Individuals with Disabilities Education Improvement Act, 2004: from http:/thomas.loc.gov/egi-bin/query/z?c108:h.r.1350.enr:%20

Prism Room

Adapted Physical Activity – A Vehicle to Transform Individuals and Professions

Thomas E. Moran (James Madison University), Rylie Power (Virginia Commonwealth University)

Primary issue(s) to be presented and discussed: 1. The impact adapted physical activity has on individuals, pre-professionals, and interprofessional collaboration. 2. Changing the face of how professionals are being trained by promoting holistic, functional, and purposeful interventions for the individual. 3. Discuss empowerment model and its associated continuum as a modality for individuals, families, professionals, and communities.

Session significance: Programming and research from Empowerment3, the center for physical activity and wellness for underserved youth as James Madison University, over the last two years has looked at the power and value of interdisciplinary collaboration on individuals with disabilities. Equally as important, we have discovered the center's impact on the over 300 pre-professional students from a variety of academic programs each semester. Our session will show the impact of collaboration and interdisciplinary work on participants and families: from initial testing and entry into our programs, to service delivery, to data collection and analysis, and advancement through the empowerment model.

For pre-service professionals, we will discuss how involvement in adapted physical activity research and programming has shaped their perceptions of interventions within their respective professions and as a result changing the way they do and will provide services.

Relation to conference theme: This session is meant to show the true power of interdisciplinary work and collaboration, which has been shown to benefit

individuals, families, professionals, and the community at large. Presenters will show how APA has become a new training ground for many professionals providing a new lens for intervention. Our adapted physical activity programming and research provides educational experiences to pre-service professionals for over 17 different academic programs. Our session will demonstrate how each professional not only brings their unique lens to the program, research, or experience, but how each sees how the vehicle of physical activity allows one to look providing their services differently.

Description of session:

Share the foundation of Empowerment3 center, Empowerment Model, and its associated continuum

Explain the interdisciplinary approach to our research and programming. Share a few examples of both

Show how the collaboration of many professionals leads to a more holistic, meaningful, and empowering intervention for individuals and their families.

Reference: Lytle, R., Lavay, B., Robinson, N., & Huettig, C. (2003). Teaching collaboration and consultation skills to preservice adapted physical education teachers. Journal of Physical Education, Recreation & Dance, 74(5), 49-53.

Friday, September 23nd, 2:50 - 3:50 p.m.
Concurrent Research Presentations

Quartz Room A

Video Modeling Improves Movement Skills in Individuals with Autism: A Meta-analysis

J.M. Irwin (Auburn University), K. R. Lohse (Auburn University), V. Hinton (Auburn University), M. Rudisill (Auburn University), Melissa Pangelinan (Auburn University)

Introduction: Movement impairments have been well documented in individuals with autism spectrum disorder (ASD) (see Gowen and Hamilton, 2013 for review). Recent studies have successfully employed video modeling as an intervention to improve communication, social, and cognitive skills (Charlop-Christy, Le, and Freeman, 2000, and Bellini and Akullian, 2007). The potential for similar success for teaching movement skills has been proposed (Case and Yun, 2015). We conducted a meta-analysis to determine the efficacy of video modeling to teach movement-related tasks in individuals with ASD.

Method: A systematic literature search was conducted in Academic Search Premier, ERIC, MEDLINE, PsycINFO, and SPORTDiscus. Study inclusion criteria included 1) participants had diagnosis of autism or ASD; 2) participants were taught movement-related tasks; and, 3) the intervention required observational learning through video modeling. All single-subject designs were screened according to additional quality indicators (Horner et al., 2005). Data were requested from authors or extracted from published figures using imageJ. Linear mixed effects modeling was used to: 1) determine the magnitude of differences between baseline and intervention for each participant for each

study; and, 2) assess overall effects of video modeling on behavior outcomes controlling for the nested structure of these data.

Results or Findings: Ten studies (n = 28) met inclusion criteria and passed qualitative screening. Two studies were excluded due to inability to accurately extract data from figures.

Consequently, future analyses contained eight studies (n = 22 participants). Overall, video modeling resulted in a significant improvement in behavioral outcomes with respect to baseline across all studies ($\beta = 35.957$, std error = 5.575, df= 35.19 t= 7.969, $p < 0.001$). The individual effects across phase ranged from $\beta = 0.91 – 94.11$).

Conclusions or Implications: Taken together, these data suggest, video modeling improves movement-related behavioral performance in individuals with ASD and is an effective means of teaching movement skills in individuals with ASD.

When We Assess, Do They Understand? A Pilot Study to Make Assessments More Accessible for Children with ASD

Andrew M. Colombo-Dougovito (University of Virginia), Luke E. Kelly, (University of Virginia)

Introduction: Increasing evidence (Liu, Hamilton, Davis & ElGarhy, 2014; Staples & Reid, 2010) suggests that children with autism spectrum disorder (ASD) develop motor skills differently than their peers and are often severely delayed. Yet, it is not understood whether the delay a part of ASD or due to deficits in social communication that are hallmark to ASD. Modifications are often necessary to augment deficits in communication displayed by children with ASD, such as visuals, which have been shown to have a positive influence on the performance of motor tasks (Breslin & Rudisill, 2011). Yet, little consensus exists among these studies on appropriate methods for modification; therefore, this study sought to build evidence for the use of certain modifications for children with ASD.

Method: A purposive sample of 9 boys with ASD was divided into three separate groups to compare the use of pictures and videos to the traditional administration on two subtests (e.g., throwing and hopping) of the Test of Gross Motor Development (TGMD-3, Ulrich, in press). Data was collected on motor performance, overall assessment time, and the understanding of the participant.

Results or Findings: Analysis suggests that there was no significant differences between the groups on both performance and time needed for the assessment. Further, there was a non-significant result when controlling for age and severity of autism on understanding, $F(2, 8) = 6.625$, $p = 0.054$, partial eta2= 0.768. Inferential statistics of such small samples sizes provide a limited understand, but allow for an analysis of trends; therefore visual assessment of the group means were used to better understand these trends.

Conclusions or Implications: Visual analysis of the results suggest that, although there is little effect on the performance of motor skills from visuals, providing visual aids conveys more information to the child. Further, trends within the data suggest a positive influence and warrant further investigation.

Quartz Room B

Inclusion in Group Exercise: An Examination of an Integrated Indoor Cycling Program

Joanna Auger (University of Alberta), Nancy Spencer-Cavaliere (University of Alberta)

Introduction: Group exercise programs for people with impairment are often based on the nature of impairment (e.g. yoga for individuals living with Multiple Sclerosis). These program offerings can be problematic in that they limit choice for individuals with impairment, may further legitimize segregation, and reduce the responsibility placed on facility managers and instructors to provide inclusive programming. The current study emerged from an opportunity to examine an existing integrated indoor cycling program. The purpose of this study was to identify the critical factors involved in delivering an inclusive group exercise program.

Method: An instrumental qualitative case study was used to explore the experiences of participants in the integrated indoor cycling program. Study participants were comprised of ten cyclists without an impairment (7 females, 3 males; 23-49yrs) and 10 cyclists who self-identified as having an impairment (e.g., spinal cord injury, poliomyelitis or cerebral palsy; 3 females, 7 males; 17-64yrs). In the program, people with and without impairment participated alongside each other using, either, upright stationary bicycles or adapted equipment. Data collection included a semi-structured interview with each participant that focused on the integrated nature of the class and the experience (or not) of inclusion within the program, as well as observations and reflective notes.

Results or Findings: Three themes emerged from the thematic data analysis: 1) seamless, 2) normal?, and 3) sense of community. Collectively, these themes

captured the ways in which participants experienced inclusion in the program as harmonious, in keeping with the original tenets of normalization, and the importance of a feeling of belonging and value.

Conclusions or Implications: Understanding from the perspectives of participants, with and without impairment, what contributes to meaningful inclusion in these types of settings can inform future practice and, in particular, the training and education of future group exercise instructors.

Acknowledgement of Research Support (Optional): Faculty of Physical Education and Recreation

The Effects of a Telehealth Exercise Program on Balance, Mobility, Self-Efficacy and Adherence in Individuals with Parkinson's Disease

Elizabeth Garcia, Robert Stone, Teri Todd, Mai Jara, Taeyou Jung, Rosa Angulo-Barroso, Ashley Samson, Mayumi Wagatsuma, David Williams

Introduction: People with PD are nine times more likely to fall than healthy populations. Supervised exercise has been shown to improve balance and mobility in people with PD. Unfortunately a number of barriers prevent people with PD from participating in beneficial exercise programs. Psychological barriers such as low self-efficacy to exercise, is a strong determinant of participation in formal exercise for individuals with PD. Advances in telehealth technology such as video-conferencing may make it easier for people with PD to connect with qualified exercise practitioners to engage in regular exercise programs. The purpose of this study was to examine the effects of a telehealth exercise program on balance, mobility, self-efficacy and adherence.

Method: Twelve Adults with PD participated in this study. Six people completed a supervised telehealth training program two times per week for twelve-weeks and six were enrolled in an independent home exercise program as a control group. Balance was evaluated using the NeuroCom Balance Master Motor Control test, and Limits of Stability test. Mobility was evaluated using the Sit to Stand, and Walk Across, and Timed Up and Go Test. Self-efficacy for Exercise Questionnaire (SEE) was used and adherence was measured by the number of sessions completed.

Results or Findings: Overall the telehealth improved in all measures with a significant improvement on the MCT (p= .042). The Independent group also showed some improvement including a significant change in their TUG times (p= .031). SE to exercise increased marginally. Adherence to the program varied widely between the two groups Telehealth had a 96.52% adherence rate compared to 33% for the control group.

Conclusions or Implications: Balance and mobility improved for adults with PD following supervised telehealth and independent exercise programs. Exercise delivery using telehealth technology was effective in increasing adherence.

Acknowledgement of Research Support (Optional): CSUN Graduate Thesis Support Program

Inclusive Physical Activity Programs for Children and Youth with Physical Disabilities: A Scoping Review

Krystn Orr (University of Toronto), Viviane Grassmann (University of Toronto), Virginia Wright (Bloorview Institute), Amy McPherson (Bloorview Institute), Guy E. Faulkner (University of British Columbia), Kelly Arbour-Nicitopoulos, (University of Toronto)

Introduction: Physical inactivity is a concern among individuals with physical disabilities. Inequities in community-based physical activity (PA) programming may play a role in physical inactivity levels and overall well-being. This scoping review examined the effectiveness and implementation of community-based inclusive PA programs targeting children and youth (aged 5-18 years) with physical disabilities.

Method: Arksey and O'Malley's framework for conducting scoping reviews was used, along with adapted PA and childhood disability expert consultations. An exhaustive search and screening of seven databases between 1980 and July 2015 resulted in the retrieval of 15 relevant articles. Studies included a variety of designs: qualitative (n = 7), case study report (n = 1), pre/post (n = 4), cross-sectional (n = 2), and randomized controlled trial (n = 1).

Results or Findings: Most studies included youth in recreational programs (40%) of both genders (87%) with cerebral palsy (67%). Most programs were integrated (40%) and had a diverse range of age groups (2 to 53 years old), group sizes (5 to 104 participants), and durations (6 days to 12 weeks). Lack of professional training in activity modifications (20%) was a common implementation barrier. Studies were of moderate-high quality (69.2%). Psychosocial outcomes were the primary focus, with positive effects shown between program participation and friendships, peer acceptance, and self-concept. Future recommendations include: increased instructor training in program modifications and knowledge of physical disabilities, appropriate

matching of individual needs to program objectives, and the emphasis on establishing common goals and interests of the group. Exploring the quality of the experiences within inclusive settings for children and youth with severe disabilities is warranted as well as how inclusion is defined within the literature.

Conclusions or Implications: Despite the heterogeneity of the studies, the results indicate that inclusive PA programs are important for positive psychological and social development of children and youth with physical disabilities.

Acknowledgement of Research Support (Optional): Social Sciences and Humanities Research Council of Canada Insight Development Grant that was awarded to Kelly Arbour-Nicitopoulos.

Amber Room A

The Perspectives of the Acadia Student Volunteers Regarding their S.M.I.L.E. Experience

Mary Sweatman (Acadia University), Roxanne Seaman (Acadia University)

Introduction: The Acadia University S.M.I.L.E. (Sensory Motor Instructional Leadership Experience) program is an innovative academic-based, yet volunteer-driven program that offers children, youth, and adults with varying disabilities a unique physical activity experience to improve their physical literacy. Throughout the academic year, this program is offered to approximately 280 individuals who are given one-on-one physical activity instruction by student volunteers. This program has involved over 5000 student volunteers, from all academic disciplines at Acadia University, who often credit S.M.I.L.E. as a highlight of their university learning. The purpose of this study was to understand these learning experiences of students who volunteered with the Acadia S.M.I.L.E. program during their undergraduate degree.

Method: Using a narrative methodology, in-depth interviews were conducted with 12 past student volunteers of the S.M.I.L.E. program. This approach allowed the participants to critically reflect on their S.M.I.L.E. story and their learning experiences. All interviews were conducted in person for a duration of 90 to 120 minutes.

Results or Findings: The reflections of the past volunteers can be used to understand their experience. The themes, from the data analysis, include: (a) shaping lives; (b) member of a family; (c) impact; (d) transformative learning; and (e) engagement. These themes will be discussed by sharing the narratives of the study participants. One of the participants stated, “It was three hours of safe, fun space, where I was appreciated, influential, and happy. It

inspired me to pursue a career in helping children with special needs, and helped me to find a direction in my own life. In twenty, fifty, or a hundred years, if someone asks me what the most important thing I did while at University was, I will never hesitate to say S.M.I.L.E."

Conclusions or Implications: The Acadia S.M.I.L.E. program has positively impacted the lives of all individuals who have been involved in this particular adapted physical program. This research has led the researchers to want to further investigate the S.M.I.L.E program as a transformative learning experience.

Acknowledgement of Research Support (Optional): This research has been funded by the Harrison McCain Emerging Scholar Award.

Dilemmas of Difference in Adapted Physical Activity: Student's Perceptions and Reactions

Geoffrey Meek

Introduction: The exploration of Dilemmas of Difference has developed from plural democracy (Dahl, 1982) to include educational policy and practice in special education (Minow, 1990; Norwich, 2008). This topic was included in an Adapted Physical Activity course given the perrenial issue of reconciling an inclusive educational philosophy with a segregated after-school practicum experience. This paper examines dilemmas in four areas of difference: conceptual, identification, curricular and location and assesses student's awareness and understanding of the dilemmas, possible resolution, and advocacy.

Method: Adapted Physical Activity students (n = 17) consented to complete specifically designed surveys to determine dilemmas of difference in two distinct phases. Phase 1 was completed at mid-semester with reactions to predetermined dilemmas in the four areas of difference. Phase 2 was completed at the end of semester and was directed at differences in identification, curriculum, and location aligned to their practicum experience. The student comments were collated and thematic analysis was conducted with themes and structural descriptions reported.

Results or Findings: In Phase 1 the students more effectively rationalized their choices in terms of curriculum and location, rather than conceptual and identification dilemmas. In Phase 2 there was an improvement in the capability to identify and advocate on different positions as students recognized dilemmas within and between class topics and experiences gained during the practicum.

Conclusions or Implications: The introduction and development of dilemmas of difference is a worthy topic in preservice Adapted Physical Activity as this prepares students for the realities of justifying difficult choices in the four areas of difference. This is particularly important when dilemmas are not perceived as benefitting either the child or themselves as teachers.

‘What about us?’ Bringing Disability Representation to the Way We Teach About Disability

Jennifer Leo (Abilities Centre), Donna Goodwin (University of Alberta)

Introduction: Disability simulations are experiential learning activities that have been used to simulate the functional and cultural experiences associated with disability. Despite their widespread use in post-secondary settings (e.g., physical education, recreation, medicine, and nursing), there is an absence of disability representation within the design and delivery of simulation activities. The purpose of this interpretative phenomenological analysis (IPA) study was to explore the meaning persons who experience disability ascribed to disability simulations as a pedagogical tool.

Method: The IPA methods of reflective writing and one-on-one interviews were utilized to capture participants’ experiences. Seven people who use wheelchairs full time (3 males, 4 females), ranging in age from 28 to 44 years (average age= 36) shared their perspectives. The participants’ experiences were interpreted through the lens of ableism to illustrate possible tensions related to disability representation by non-disabled instructors.

Results or Findings: This presentation will focus on the collective questioning that participants disclosed surrounding their absence from the design and delivery of disability simulations. The participants’ words will be used to juxtapose disability reality with disability simulations and to provide insight into the conflicting views surrounding the role of fun as an engagement strategy or distraction.

Conclusions or Implications: The importance of disability representation in the development and implementation of disability simulations was acknowledged as a way to encourage pedagogical reflexiveness in the way we teach about

disability. This presentation will explore strategies to involve insiders to provide meaningful pedagogical experiences for post-secondary students.

Acknowledgement of Research Support (Optional): Social Sciences & Humanities Research Council, Dissertation Fellowship

Prism Room

Halliwick Concept of Swimming and its Influence on Motoric Competencies of Children with Severe Disabilities

Tereza Vaščáková (Palacky University), Martin Kudláček (Palacky University)

Introduction: The research shows that early stimulation in water can bring multiple benefits to children with disabilities (Aleksandrovic, Jorgic, Block & Jovanovic, 2016; Becker, 2004; Stan, 2012). Swimming is one of the most appropriate physical activities for persons with cerebral palsy (CP). The purpose of this study was to describe the influence of Halliwick concept of swimming on development of motor competencies of children with severe disabilities.

Method: Participants of this study were ten children with severe disabilities – cerebral palsy (CP) and autism (mean age 5.5 years). Aquatic skills were evaluated using Water orientation test (WOTA) created by Tirosh, Katz-Leurer and Getz(2008). Gross motor skills were evaluated using Gross motor function measure (GMFM) by Russell, Rosenbaum, Avery, & Lane (2002). Testing was done at the beginning and at the end of ten week Halliwick swimming intervention.

Results or Findings: Results of WOTA testing showed improvement of aquatic skills in children with diparetic cerebral palsy by 0.64 points, in children with quadruparetic cerebral palsy by 0.76 points and in children with autism by 1.18 points. Gross motor skills improved by 4.25% in children with diparetic CP, 1.57% in children with autism and 5.20% in children with quadruparetic CP.

Conclusions or Implications: We confirmed that the Halliwick Concept of adapted aquatics is an appropriate therapy, which also leads to learning desirable aquatics skills. WOTA is also appropriate evaluation tool for adapted aquatics of students with CP as well as students with autism. Getz et al.

(2006b) did a bigger scale study with 40 students (children aging 3-7 years mainly with CP). They used the evaluation tool AIM (Aquatic Independence Measure) which is more detailed then WOTA evaluation used in our study. They have showed 77% improvement in swimming skills, 70% improvement in breathing control and 62% improvement in water submerge. We have showed improvement in water submerge in 40% of students. Getz et al. (2006b) showed 90% improvement in water transfers and in our case 70% of students improved in this skill.

Acknowledgement of Research Support (Optional): This study was supported by project IGA_FTK_2015_007 “Physical activity and lifestyle as the determinants of health and quality of life of persons with disabilities”

Aquatic Walking in Individuals Post-Stroke

Brenda Jeng, Takuto Fujii, Michael Owens, Danica Tolentino, Mai Narasaki-Jara, Taeyou Jung

Introduction: Poor cardiorespiratory fitness may limit activities of daily living for individuals post-stroke, which may lead to sedentary lifestyles. Aquatic walking (AW) may provide an optimal environment to improve cardiorespiratory fitness of individuals post-stroke. The purpose of this study is to compare cardiorespiratory responses between AW and overground walking (OW) in individuals post-stroke.

Method: 14 people post-stroke and 14 healthy controls (age- and gender-matched) participated in this cross-sectional study. Participants performed both AW and OW for six minutes at a matched speed, which was determined by the average AW speed. Cardiorespiratory variables, including oxygen consumption (VO2), energy expenditure (EE), and minute ventilation (VE), were measured using a telemetric metabolic system during 10-minute seated rest and 6-minute walking sessions.

Results or Findings: Individuals post-stroke showed no significant differences in cardiorespiratory responses between AW and OW. However, healthy controls elicited significant increases in VO2, EE, and VE values during AW when compared to OW (all $p<0.01$). Further analysis was conducted after dividing the post-stroke group into two subgroups based on the median of their averaged maximum walking speeds (0.46m/s): fast walkers and slow walkers. The slow walker subgroup showed decreases in mean VO2 and EE values during AW (all $p<0.01$). Healthy adults demonstrated significant group x condition interactions in VO2 while individuals post-stroke did not.

Conclusions or Implications: Our results indicate that people post-stroke do not increase their energy expenditure while walking in water whereas healthy

adults do. A decrease in energy expenditure can be expected during AW when walking speed of people post-stroke is slow. Our findings suggest that aquatic gait training can be beneficial for individuals post-stroke who cannot withstand prolonged durations of gait training on land.

Measuring Quality of Life and Level of Physical Activity in Elderly Population

Julie Wittmannova

Introduction: Quality of life of population 65 plus is very timely topic and we deal with the evaluation of the quality of life of elderly in relation to the amount of carried physical activity (PA), type of housing, age, gender and other variables. The aim of presentation is to summarize the basic findings and offer for thought the question arose.

Method: Techniques used for quality of life measurements: SQUALA (Subjective Quality of Life Analysis); SEIQoL (Schedule for the Evaluation of Individual Quality of Life); IPAQ (International Physical Activity Questionnaire – short version); questionnaire of own construction. The results are evaluated by Mann-Whitney U test and Kruskall-Wallis ANOVA test ($p \leq 0,05$).

Sample of 400 participants, aged 60 plus (seniors living in nursing homes, independently; in the town/village; physically active/inactive).

Results or Findings: Results of evaluation of subjective quality of life by SQUALA does not correlated with the information on the level of participation in PA (determined by questioning), quality of life affects the environment in which people live (dependence/independence), age; gender). Application of the methods SQUALA and SEIQoL in the elderly population seems appropriate, the obtaining information regarding the quantity (frequency and load) of PA and their quality, used techniques do not meet our expectations (IPAQ, Questions about frequency and type of PA).

Conclusions or Implications: The subjective evaluation of quality of life of elderly population is important part of evaluation process, especially used to evaluate satisfaction with offered services and programs. Techniques SQUALA and SEIQoL gave us the desired outcomes. We are looking for techniques to

evaluate the quality and quantity of participation in physical activity in elderly. Results of evaluation of quality of life show a relationship to the type of housing, age and, in some cases, the gender of participants, not to physical activities.

Acknowledgement of Research Support (Optional): PA and lifestyle as determinants of health and quality of life persons with disabilities (IGA_FTK_2015_007).

Accessibility Commitments

Physical Accessibility

The conference area at The Matrix is located on the second floor of the hotel and is accessible by elevator. The conference rooms are in close proximity and each have an accessible entrance, with the exception of the Amber Room which has two entrances. The Amber Room can be accessed using stairs or a lift that requires entering through a side door.

The bathrooms located on the second floor are wheelchair accessible. The hotel itself does not have gender-neutral bathrooms, however gender-neutral washrooms are available in the Starbucks on the main floor of the hotel. You will need to exit the hotel to access Starbucks.

We acknowledge the impact inaccessible space has on people's bodies and minds.

Visual Accessibility

To make visual presentation materials more easily readable, we ask that conference presenters follow best practices for visual accessibility. For people who might not know what these best practices are, here are some considerations:

- High contrast between the text colour and background colour
- At least 14 point font for PowerPoint slides, and even larger for posters presentations
- Avoid decorative fonts; recommended fonts include Arial, Verdana, Helvetica, and Tahoma
- The use of ALL CAPS or italics is not recommended
- Use bold fonts sparingly
- Include a short description of visual images (including video)

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