Lieu: Centre de réadaptation Lethbridge-Layton-Mackay, site MAB
Date : 11 Décembre 2019
Heure : 8h30– 13h00

Journée scientifique de la réadaptation du CIUSSS CODIM

Centre intégré universitaire de santé et de services sociaux du Centre-Ouest-de-l'Île-de-Montréal
Québec
Integrated Health and Social Services University Network for West-Central Montreal

CRIR
Centre de recherche interdisciplinaire en réadaptation

PROGRAMME

7h30	Arrivée des participants, installation des affiches
8h30	**Mot de bienvenue** *Dr. Sara Ahmed & Dr. Walter Wittich, Responsables de sites CRIR*
8h35	**Les hauts et les bas de la science en communication** *Dr. Joe Schwarcz, Directeur du Bureau des sciences, de la société de l'Université McGill.*
9h35	Pause
9h50	**Parcours et confessions** *Frédérique Poncet, Chercheure d'établissement, Centre de réadaptation Lethbridge-Layton-Mackay*
10h00	**Knowledge & Understanding of Eye Disease Among Older Adults with Vision Impairment** *Caitlin Murphy, Department of Psychology, Concordia University, École d'optométrie, Université de Montréal*
10h15	**A Learning Health System for the Management of Chronic Pain: Trajectory Analysis** *Regina Visca, McGill Centre of Expertise in Chronic Pain*
10:30	Session de présentations par affiches
11h30	**TranXition: An Intervention Paradigm Shift to Enhance the Social Participation and to Support Transition to Adulthood of Youth with Disabilities** *Emily Scazzosi et Philippe Harrison, Centre de réadaptation Lethbridge-Layton-Mackay du CIUSSS du Centre-Ouest-de-l'Ile-de-Montréal*
11h45	**Un protocole décrivant le processus de création collaborative d'un programme d'activité physique adapté auprès de personnes ayant subi un traumatisme craniocérébral modéré-grave** *Enrico Quilico, Université de Toronto, CRIR*
12h00	Dîner
13h00	Fin de l'événement

ORAL PRESENTATIONS/ PRÉSENTATIONS ORALES

1. Knowledge & Understanding of Eye Disease Among Older Adults with Vision Impairment

Caitlin Murphy [1, 2,5], Stephanie Pietrangelo [2], Sophie Hallot [1], Jonah Touch [4], Aaron Johnson [1,5]

1. Department of Psychology, Concordia University; 2. School of Optometry, University of Montreal; 3. CIUSSS du Centre-Ouest-de-l'Ile-de-Montréal; 4. School of Optometry, University of Waterloo; 5. Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain (CRIR)

By 2026, projections indicate that 1/5 Canadians will be over the age of 65. This shift in demographics will be accompanied by an increase in age-related eye disease. Survey studies have reported vision loss as a major medical concern among older adults, but there is little information on older adults' awareness and knowledge of age-related eye diseases. This study aims to assess the knowledge and understanding older adults have of their own eye disease and its prognosis.

Participants over the age of 50 with a visual impairment were recruited from the Lethbridge-Layton-Mackay Rehabilitation Centre (CRLLM), the Low Vision Self-Help Association (LVSHA) of the West Island and through word of mouth. Visual acuity and contrast sensitivity were measured using the ETDRS charts and Mars Charts, respectively. Optical coherence tomography was used to take cross-sectional images of participant retinas. Participants were asked to name their visual diagnoses and describe them in their own words. Participant diagnoses were compared to diagnoses determined by an optometrist or ophthalmologist.

To date, this study has recruited 26 participants (7M, 19F) over the age of 50 years (51-95). Many participants (73%) were able to name their visual diagnoses, articulate their symptoms, and discuss their treatment/prognosis. The majority of these individuals (67%) were clients or participants of the CRLLM or LVSHA. Of the 27% (4M, 4F) who were unclear or had misunderstood their diagnoses, half were participants in a low vision support group, but had multiple visual diagnoses and it was the congenital or trauma-related visual impairments acquired before joining that remained unclear. The other four individuals who misunderstood their diagnoses were not involved with any low vision organizations.

Visual impairment is sometimes dismissed as part of aging. A lack of awareness and knowledge can lead to missed or delayed treatment and/or lifestyle modifications. The preliminary results of this study demonstrate the important role organizations like the CRLLM and LVSHA play in education and adaptation to low vision for older adults. Individuals with a better understanding of their own diagnoses are more likely to follow through with doctor-recommendations and have successful treatment or slowed progression.

2. A Learning Health System for the Management of Chronic Pain: Trajectory Analysis

Regina Visca [1], Krista Brecht [2], Brian Bradley [2], Christine Clermont [3], Nancy Cox [4,8], Jocelyn Decoste [5], Josephine Lemy Dantica [3], Guillaume Deschenes [4], Annik Jobin [6], Marie-Andrée Lahaie [2], Josie Pierre [3], Prolet Tocheva [4], Sara Ahmed [7-8]

1. McGill Centre of Expertise in Chronic Pain; 2. McGill University Health Centre; 3. CIUSSS Ouest-de-l'Ile-de-Montreal; 4. CIUSSS Centre-Ouest-de-l'Ile-de-Montreal; 5. Patient partner; 6. CISSS Montérégie-Ouest; 7. McGill University; 8.Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain (CRIR)

Background: In Quebec, the health care system faces major shortcomings such as fragmentation of care, lack of coordination of services, and poor data management and data sharing. Moreover, data from electronic medical records in primary health care are difficult to access and clinical information does not follow the patient, making the evaluation, coordination and integration of care difficult. These shortcomings are reflected, in particular, in the accessibility and continuity of services offered but also in the decreased capacity to meet the needs of people suffering from chronic pain (CP). In order to address these gaps, this project aims to build a learning health system (LHS) in CP using an integrated digital platform. The LHS will be based on inter and intra-institutional trajectories that support the notion of integrated care and provide personalized and patient-centered care while ensuring cross-functional coordination of care and continuity of clinical information.

Objectives: In the first phase of the project, patients, providers and decision-makers are collaboratively defining the integrated structures and processes that make up the trajectory of care for various CP pathologies from primary to tertiary care. This phase of the study identified the structures and processes that influence the dimensions of the Quadruple Aim, mainly patient experience, patient outcomes, provider experience and costs. The Nominal Group Technique (NGT) was used to guide our assessment and prioritisation of the existing gaps in structures and processes of the existing low back pain (LBP) trajectory. The LBP trajectory analysis is part of a larger strategy of trajectory analysis and quality improvement that is the foundation of a LHS.

Methods: Four meetings were held in which patients, providers, decision-makers and researchers were asked to define the LBP trajectory including : services offered, processes, patient profiles/volumes, actors/partners involved, coordination mechanisms, outcomes and technology. Trajectory mapping was used to illustrate the patient’s journey across the cycle of care from primary to quaternary. NGT in combination with the Wagner Chronic Disease Care Model was then used to 1) identify and explain the gaps in the cycle of care; and 2) vote and prioritize the gaps that have the greatest impact on the Quadruple Aim dimensions.

Results : Four providers, 6 managers/decision-makers, 1 patient and 2 researchers identified the gaps in the following areas for the LBP trajectory : adaptation of programs to patient readiness, availability of psychosocial, patient-centred care, shared decision-making, promotion and prevention, access, follow-ups, knowledge of trajectories, availability of the right service at the right time, referral mechanisms, integrated and coordination of care, availability of relevant clinical information that follows the patient. The stakeholders prioritized addressing the following 5 gaps: 1) right service is not available at the right time; 2) poor referral mechanisms; 3) information does not follow the patient; 4) services are fragmented; and 5) lack of services for patients that are not ready for self-management.

Conclusions: The preliminary analysis of the LBP trajectory reveals variations in care that impact patient outcomes, patient experience, provider experience and costs. More importantly, the analysis revealed that despite the willingness to work together as a collaborative network, health care establishments have been providing fragmented services. Balancing complex patient with a changing system driven by contradictory priorities of quality, access and cost is challenging. A LHS which integrates a network approach, can facilitate communityship and optimize cross-functional coordination of care and continuity of clinical information.

3. TranXition: An Intervention Paradigm Shift to Enhance the Social Participation and to Support Transition to Adulthood of Youth with Disabilities

Emily Scazzosi [1,2], Philippe Harrison [1], Gaelle De Roussan [1], Virginie Cousineau [1], Isabelle Cormier [1,2], Chantal Robillard [1,2], Tanveer Dhoot [1]

1. Lethbridge-Layton-Mackay Rehabilitation Center (LLMRC) CIUSSS West-Central-Montreal; 2. Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain (CRIR)

Introduction: Transition to adulthood represents a challenge for youth with disabilities and their families, often experienced as "standing at the edge of a cliff". The continuum from pediatric to adult services is limited and lacks consideration for community participation. The MAB-Mackay Rehabilitation Centre has developed the TranXition program to address these needs by helping youth maXimize their potential through eXposure to real life eXperiences. The service delivery approach includes community group-based interventions with youth (15-25 years old living with motor and/or sensory disabilities) supported by an interdisciplinary team. Activities chosen by and with the youth are means to develop their life skills, including outings within the community as well as over-night stays, depending on the group.

Objectives: To develop an offer of service for the needs of clients by integrating best practices through consultation of literature, Canadian health and rehabilitation partners, as well as client feedback. To have ongoing evaluation and quality improvement of said offer of service to be able to provide recommendations for this clientele in other contexts.

Methodology: Program evaluation and Quality Improvement is being done using the following outcome measures: Assessment of Life Habits, Individual Goal Attainment Scaling, Client Satisfaction Questionnaire, as well as semi-structured interviews. In addition, a separate study was done to evaluate the feasibility of implementing the use of digital assessment (Photovoice 2.0) to measure the process of change as experienced by the participants.

Results and/or main outcomes: Five groups, including two parent groups, have been run over the course of the first year of the program. The outcome measures demonstrated the following: individual goal accomplishment and increased autonomy for the majority of the participants; an increase in clarity of profile/needs; high level of satisfaction in regards to the intervention; general positive feedback about the non-traditional factors of intervention. By integrating principles of best practices, client feedback, as well as recommendations from interveners and focus-group participants, the TranXition program contributes to the development of an innovative evidence-based rehabilitation approach inclusive of patient's eXperiences outside of institutional walls. It propels youth's development of autonomy by recognizing their strengths as active participants to society.

4. Un protocole décrivant le processus de création collaborative d'un programme d'activité physique adapté auprès de personnes ayant subi un traumatisme craniocérébral modéré-grave

Enrico Quilico [1,5], Bonnie Swaine [2,5], Shane Sweet [3,5], Lindsay Duncan [3], Shawn Wilkinson [4], Colantonio Alarie [1]

1. Université de Toronto; 2. Université de Montréal; 3. Université McGill; 4. Université Concordia; 5. Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain (CRIR)

Introduction : l'activité physique (AP) et le sport sont suggérés comme des approches efficaces pour traiter les séquelles résultant d'un traumatisme craniocérébral modéré-grave (TCC-MG) et peuvent agir positivement sur l'intégration sociale, l'humeur et la qualité de vie. Cependant, la promotion de la participation à l'AP et au sport pour les personnes ayant subi un TCC-MG pourrait être un défi en raison des séquelles. Donc, les programmes doivent être conçus de manière appropriée. Ce projet porte sur la cocréation d'un programme bonifié d'AP et de sport pour les personnes ayant subi un TCC-MG qui a été piloté en collaboration avec les YMCA du Québec depuis janvier 2017. Quatre participants au programme jouant actuellement le rôle de mentors partagent leurs points de vue, motivent les participants (n=16) du programme offert en 2019 et aident au processus de développement du nouveau programme.

Objectifs : 1) explorer l'impact du programme actuel sur les mentors, les participants et l'administration afin d'informer le processus de cocréation du nouveau programme; 2) construire le modèle logique du nouveau programme tout en identifiant des stratégies pour assurer la pérennité du programme au sein du YMCA; 3) cocréer un ensemble de protocoles clairement définis afin de permettre la mise en place du nouveau programme impliquant les mentors et l'évaluation de son efficacité quant à améliorer l'autodétermination des participants clés.

Méthodologie : Un échantillon de convenance hétérogène composé de 20 participants adultes sera recruté et questionné au long du processus. Conformément à l'approche participative, il y aura une collaboration équitable entre les représentants des organisations (n = 3), une équipe de chercheurs multidisciplinaires (n = 5) et des membres de la communauté (mentors, n = 4) dans chaque aspect de recherche. À travers un processus itératif, des sessions régulières seront organisées avec des groupes de travail pour développer un modèle logique afin de faciliter l'élaboration des protocoles du nouveau programme.

Résultats anticipés : cette démarche collaborative nous permettra de créer un programme d'AP et de sport bien adapté aux besoins des personnes ayant subi un TCC-MG et améliorera nos connaissances des facteurs qui favorisent la participation en AP après un TCC-MG.

POSTER PRESENTATIONS / PRÉSENTATIONS PAR AFFICHES

1. Canadian platform for trials in non-invasive brain stimulation (CanStim) consensus recommendations for repetitive transcranial magnetic stimulation in upper extremity motor stroke rehabilitation trials

2. Robot-assisted modulation of post-stroke motor-network connectivity: From basic science to clinical application

3. Referral process and clinical pathway for children experiencing difficulties with transportation: A collaborative approach

4. Applicability and findings of the strange situation paradigm in infants with visual impairment

5. Relationships between quadriceps muscle strength with vastus medialis cross-sectional area and vastus medialis intramuscular fat in patients with knee osteoarthritis

6. Prospective analysis of sensitivity to physical activity among adults with recent onset low back pain

7. Deaf blindness or dual sensory impairment: What could be done differently to enable their societal participation?

8. Photovoice 2.0: Experiences and meanings of the TranXition program

9. Types d'interventions en activité physique, leurs caractéristiques et leurs effets chez les personnes ayant subi un traumatisme craniocérébral léger: Une revue de la portée

10. Determinants that influence knowledge brokers' and opinion leaders' role to close knowledge practice gaps in rehabilitation: A realist review

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11. Personalized training improves upper limb recovery in patients with moderate-to-severe sub-acute stroke

12. Comparison of arm movements directed to the body with those made to points in external space in healthy and post-stroke subjects

13. Creation of dance therapy for children with cerebral visual impairment: Results of a scoping review

14. Exploration des effets d'un programme de réadaptation multidisciplinaire sur l'activité « préparation des repas » chez des adultes cérébrolésées

15. Assessment of vision, hearing and cognition in elderly individuals with low vision undergoing visual rehabilitation: Preliminary data analyses at baseline

16. Eccentric-viewing training for reading: Does it transfer to improved balance in the visually impaired?

17. L'intervention SAAM: Une intervention de psychoéducation efficace pour diminuer les symptômes post-commotionnels en phase post-aiguë

18. Améliorer le sentiment de compétences professionnel et les pratiques d'évaluation vocale par le biais d'une communauté de pratique pour les orthophonistes du Québec

19. Crise des opioïdes : Quels sont les impacts pour les personnes souffrant de douleur chronique non-cancéreuse ?

20. Using integrated KT approaches to promote inclusive physical and leisure for children with disabilities

21. Étude qualitative de l'impact de la crise des opioïdes chez les personnes souffrant de douleur chronique non-cancéreuse

22. Co-construire des outils efficaces de transfert des connaissances pour une utilisation appropriée des aides de la mobilité

23. Telerehabilitation to increase access to rehabilitation services for youths with arthrogryposis: Preliminary data

24. Which factors can predict the use of a head-mounted low vision aid?

25. Trajectoires d'évolution fonctionnelle d'adultes ayant subi un TCC et recevant des services de réadaptation: Le projet mayo-portland adaptability inventory (MPAI-4)

26. PLAY: Participation in Leisure through Accessible plaYgrounds

27. Early mobilization in people with acute cardiovascular disease reduces discharge to a rehabilitation facility

28. Dietary protein intake in older adults undergoing cardiac surgery

29. What factors influence the experiences of older adults who pursue braille training? A qualitative study

30. Analysis of lumbo-pelvic coordination variability during a sit-to-stand task in adults with low back pain

31. **The impact of context-based interventions on participation of children with disabilities: A systematic review**

32. **Towards developing mobility ontology in acquired brain injury (ABI) population: Interactive knowledge translation**

33. **The Comprehensive Coordination Scale (CCS): A new tool to assess movement quality and performance**

34. **What is the biomedical research and informatics living lab for innovative advances of new technologies (BRILLIANT) in mobility?**

35. **A comparison of muscle activation and joint angles during gait between patients with ehlers danlos syndrome and healthy adults**

36. **The effect of fixation stability on balance & posture in vision impairment**

37. **The link between cognitive impairment & drusen characteristics in age-related macular degeneration**

38. **Empowering youth with a rare disease: Lessons learnt from a PhotoVoice project**

1. Canadian platform for trials in non-invasive brain stimulation (CanStim) consensus recommendations for repetitive transcranial magnetic stimulation in upper extremity motor stroke rehabilitation trials

Jodi D. Edwards [1], Sandra E. Black [2,3,11], Shaun Boe [4], Lara Boyd [5] ,Arthur Chaves [6], Robert Chen [3,7], Sean Dukelow [8], Joyce Fung [9,19], Adam Kirton [10], Jed Meltzer [11], Zahra Moussavi [12] Jason Neva [5], Caroline Paquette [13,19], Michelle Ploughman [6], Sepideh Pooyania [14], Tarek K. Rajji [15,16], Marc Roig [9,19], Francois Tremblay [17], Alexander Thiel [18, 20]

1. University of Ottawa Heart Institute; 2. Department of Medicine (Neurology) Sunnybrook Health Science Centre, University of Toronto; 3. Hurvitz Brain Sciences Research Program, Sunnybrook Research Institute; 4. School of Physiotherapy, Dalhousie University; 5. Department of Physical Therapy, University of British Columbia; 6. Faculty of Medicine, Memorial University; 7. Toronto Western Hospital; 8. Department of Clinical Neurosciences, University of Calgary; 9. School of Physical and Occupational Therapy, McGill University; 10. Departments of Pediatrics and Clinical Neuroscience, Cumming School of Medicine, University of Calgary; 11.Rotman Research Institute, Baycrest Hospital; 12. Department of Electrical and Computer Engineering, University of Manitoba; 13. Department of Kinesiology and Physical Education, McGill University; 14. Division of Physical Medicine and Rehabilitation, Department of Internal Medicine, University of Manitoba; 15. Department of Psychiatry, University of Toronto; 16. Centre for Addiction and Mental Health; 17. Faculty of Health Sciences, University of Ottawa; 18. Division of Neurology, Department of Medicine, McGill University; 19. Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain (CRIR); 20.CIUSSS West-Central Montreal

Background: Large scale clinical trials demonstrating the efficacy of repetitive transcranial magnetic stimulation (rTMS) for post-stroke functional motor recovery are lacking. Missing consensus regarding the optimal protocol for rTMS in stroke has been a challenge for trial design.

Objective: To develop consensus recommendations for the use of rTMS as an adjunct intervention for upper extremity motor recovery in stroke rehabilitation trials.

Methods: The multidisciplinary Consensus Working Group of clinicians and researchers from across Canada identified four consensus themes: 1) patient population; 2) stimulation parameters; 3) rehabilitation interventions; and 4) outcome measures. Comprehensive evidence reviews for each theme were conducted and a weighted dot-voting procedure was used to achieve consensus.

Results: The following consensus recommendations were reached: 1) recruit cortical and subcortical stroke patients between 2 and 12 weeks after stroke who have been identified to need upper extremity rehabilitation 2) randomization to receive 1800 pulses of 1Hz rTMS over contralesional M1 at 120% of RMT or sham stimulation 3) followed by 60 minutes of a controlled treatment with known effects (GRASP), for a total of 15 sessions. 4) use of a suite of validated core primary outcome measures of impairment, function and ability as well as subjective patient-centered and real-world actigraphy secondary outcomes and MR imaging biomarkers and MEP parameters as exploratory outcomes.

Conclusions: Establishing the CanStim platform and developming these consensus recommendations for an rTMS protocol for clinical trials is a first step toward the translation of non-invasive brain stimulation technologies into the clinic to enhance stroke recovery.

2. Robot-assisted modulation of post-stroke motor-network connectivity: From basic science to clinical application

Neeraj Kumar [1], Mohammad Darainy [1], Lauren Silver [3], Reshmi Varghese [3], Sharon Shapiro [3], David Ostry [1], Alexander Thiel [2,3]

1. Department of Psychology, McGill University; 2. Department of Neurology and Neurosurgery, McGill University; 3. Jewish General Hospital, CIUSSS West-Central Montreal

Background: Residual somatosensory function is necessary for the re-acquisition of motor skills following stroke, and sensory recovery may precede and trigger improvements in motor function. We have shown that a single session of robot-assisted perceptual learning can facilitate motor learning in chronic stroke patients and improve arm reaching performance. This improvement was related to connectivity changes in motor and sensory brain networks. With the present study, we investigate the effects of 5 repeated sessions of somatosensory training on brain motor networks and motor function in subacute stroke patients.

Methods: 40 patients with first ischemic stroke causing an upper extremity motor deficit of at least 2 in the upper extremity item of the NIHSS within the first 30 days after the event are being recruited. Patients are randomized to either receive a 5d treatment course of robot-assisted somatosensory training with feedback versus 5 d robot-assisted simple passive arm movement. The specific outcome variables Fugl-Meyer score for upper extremity, and robot assessed arm reaching accuracy as well as resting state fMRI for measuring functional connectivity are assessed between 1-3d prior to the first therapy session, 1-3 days and 90-93 days after the last therapy session.

Results: This is an ongoing trial. To date 26 subjects have been recruited. Preliminary behavioral results and functional connectivity analysis will be presented.

Conclusion: We expect that proprioceptive robot-assisted training with feedback will transfer into a persistent improvement of motor function in subacute stroke patients. We expect further that this transfer from proprioceptive input to motor output will be accompanied by specific changes in connectivity patterns. We expect that individual patients with preserved structural and functional connectivity within the affected hemisphere, will better respond to the therapy than patients with high interhemispheric connectivity, thus offering a pathophysiological driven approach to a new rehabilitation strategy.

3. Referral process and clinical pathway for children experiencing difficulties with transportation: A collaborative approach

Alyssa Merilees [1,2]

1. Lethbridge-Layton-Mackay Rehabilitation Center - CIUSSS Montreal West-Central
2. Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain (CRIR)

As part of their practice of assessing the needs of a client to be a driver or passenger in their family vehicle, occupational therapists working in the field of driving rehabilitation and vehicle adaptation are called upon to work with paediatric clients. The particular context of this clientele, including the involvement of several players (parents, rehabilitation teams, CLSCs, schools) and the laws governing the transportation of young children (compulsory car seat), creates clinical challenges for occupational therapists working in vehicle adaptation. In order to improve the paediatric client's experience, a clearer pathway between referral teams and specialized programs in driving and vehicle adaptation is desirable.

This poster will present a referral and screening pilot project, initiated by the Constance-Lethbridge Rehabilitation Centre in Montreal in partnership with the MAB-Mackay Rehabilitation Centre and the Miriam Home and Services, to address the safe transportation of children with special healthcare needs. The results of this working committee will be presented, including the proposal for a clinical pathway and the sharing of a tool to identify and address transportation difficulties. Reflection on the integration of the proposed clinical pathway will also be shared.

4. Applicability and findings of the strange situation paradigm in infants with visual impairment

Andrea Urqueta Alfaro [1], Paul Meinz [2], Valerie Morash [3], Daisy Lei [2], Deborah Orel-Bixler [4]

1. Université de Montréal; 2. Consumnes River College; 3. Smith-Kettlewell Eye Research Institute; 4. School of Optometry, University of California, Berkeley

Given the effects of attachment in children's socio-emotional outcomes, studies are necessary to investigate the impact of children's sensory impairments on attachment development. Yet very little research has focused on infants with visual impairment (VI), a population in which infant-caregiver emotional exchanges through visual means are reduced or absent.

To conduct attachment research in VI infants, we must first investigate methodological questions that arise from the fact that current paradigms were designed for typically sighted children. Thus, our first aim was to investigate the applicability of the Strange Situation Paradigm (SSP) in 20 VI infants (with no additional disabilities and who were receiving developmental counseling). Our results indicate that the SSP, with added instructions to maximize infants' perception of the procedure's relevant information, can successfully trigger VI infants' attachment behavior. All but 1 of the 27 collected SSPs were deemed classifiable by a certified and experienced SSP coder.

Our second aim was to report the distribution of attachment patterns in VI infants. Because everal documented factors put at risk attachment development in VI infants, we wondered if we would find an increased prevalence of insecurity in our sample of VI infants, compared to reports in sighted peers. We did not have a strong prediction on this point because if caregivers are aware of the optimal conditions to emotionally engage with their VI infants, and of the idiosyncratic ways their infants signal attachment, caregivers will be more likely to perceive and respond to their VI infants' signals. If so, a higher representation of insecurity may not be an unavoidable outcome in this population of children. Indeed, across the ages tested (fractional age range = 0.9-2.33), most VI infants' attachment patterns were classified as secure (table 2) and organized.

In summary, the present investigation provides evidence that the SSP, with added instructions to increase VI infants' perception of critical events is applicable to this population of children. Findings also suggest that, VI infants with no additional disabilities and whose caregivers receive developmental counseling, do not necessarily show a higher prevalence of attachment insecurity, compared to sighted peers.

5. Relationships between quadriceps muscle strength with vastus medialis cross-sectional area and vastus medialis intramuscular fat in patients with knee osteoarthritis

Anthony Teoli [1,2], Jean-Pierre Pelletier [3], Johanne Martel-Pelletier [3], Shawn Robbins [1,2,4]

1. School of Physical and Occupational Therapy, McGill University; 2. Lethbridge-Layton-Mackay Rehabilitation Center CIUSSS West-Central Montreal; 3. Osteoarthritis Research Unit, University of Montreal Hospital Research Center; 4. CRIR

Introduction: Reduced quadriceps muscle strength is an independent risk factor for the development of knee osteoarthritis (OA). Quadriceps inter- and intramuscular fat are associated with an impairment in neuromuscular activation and decreased quadriceps strength in both healthy, older adults and individuals with knee OA. The vastus medialis (VM) has an important role in functional knee stability. Consequently, VM fat infiltration could potentially impact knee joint structure and muscle function and warrants further investigation.

Objectives: To estimate the extent to which VM intramuscular fat relates to quadriceps muscle strength.

Methodology: For this cross-sectional study, participants with knee OA were recruited and classified into two groups: non-traumatic (n=22; mean age=60 years) and post-traumatic (history of anterior cruciate ligament rupture confirmed on MRI, n=19; mean age=56 years). Healthy controls were also included (n = 22, mean age=59 years). Quadriceps muscle strength was assessing by performing a knee extension maximum voluntary isometric contraction in sitting with the knee in 45° of flexion using an isokinetic dynamometer. Knee extensor torque was normalized to body mass (Nm/kg). A 3T MRI was utilized to measure VM intramuscular fat and VM muscle cross-sectional area. Fully automated selection and quantification of VM cross-sectional area and percentage of fat infiltration (%fat) were performed. One-way analysis of variance (ANOVA) with modified Bonferroni corrections compared age, BMI, quadriceps muscle torque, VM cross-sectional area and VM %fat between groups. Forced entry multiple linear regression analyses examined the relationship between quadriceps muscle torque and VM %fat, after accounting for age, sex and VM cross-sectional area.

Results: VM %fat in the non-traumatic OA group was significantly higher compared to both the healthy participants (p=0.045) and post-traumatic OA group (p=0.041). There were no significant differences between groups (p>0.05) for any other participant characteristics. A higher VM %fat was significantly associated with reduced quadriceps muscle torque (B=-0.037, p=0.032). Total explained variance (R2) in quadriceps muscle torque was 38%.

Conclusions: VM intramuscular fat may impair quadriceps muscle strength. Interventions targeted at reducing VM intramuscular fat, such as exercise and weight loss, may help to restore optimal VM muscle function, enhance knee joint stability and minimize subsequent cartilage loss.

6. Prospective analysis of sensitivity to physical activity among adults with recent onset low back pain

Arthur Woznowski-Vu[1], Daniel Flegg[1], Rebekah Wickens[1], Andrea Aternali[1], Karen Meyer[2], Michael Sullivan[3,4], Timothy H. Wideman[1,4]

1. School of Physical and Occupational Therapy, McGill University; 2. CBI Health Group, Montreal, QC; 3. Department of Psychology, McGill University; 4. Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain (CRIR)

Introduction/Aim: Recently developed measures for sensitivity to physical activity (SPA) use brief physical tasks and monitor evoked pain-related responses. However, these measures have not yet been studied prospectively. The purpose of this study was to estimate the extent to which SPA predicts pain and disability among adults with recent onset low back pain (<6 months), cross-sectionally and prospectively (3-month follow-up).

Methods: SPA was assessed using a repeated lifting task with difficulty tailored to personal pain responses. SPA-related measures included evoked pain (single lift, 10 repeated lifts), pre-post pressure pain threshold (hands, lower back), and task-specific questions (catastrophizing, fear, pain self-efficacy). Otherwise, participants answered questionnaires (Demographic, Pain Catastrophizing Scale, 11-item Tampa Scale of Kinesophobia, Brief Pain Inventory, Pain Disability Index). 3-month follow-up was completed by telephone (pain and disability questionnaires).

Results: Hierarchical regression analysis on 72 participants (preliminary analysis). Pain evoked with 10 lifts uniquely predicted pain at initial visit ($\beta=.383, t=3.587, p=.001$) and 3-month follow-up ($\beta=.268, t=2.049, p=.044$), beyond pain evoked with single lift. Pain evoked with 10 lifts uniquely predicted disability at initial visit ($\beta=.283, t=2.570, p=.012$) beyond pain evoked with single lift, but not at 3-month. Task-specific catastrophizing uniquely predicted disability at 3-month ($\beta=.298, t=2.701, p=.009$) beyond general pain catastrophizing, but not cross-sectionally. The pre-post change in pressure pain threshold (lower back) uniquely predicted disability at 3-month follow-up ($\beta=-.271, t=-2.357, p=.021$), but not cross-sectionally.

Discussion/Conclusions: This is the first study which prospectively analyzed the predictive value of SPA. It is among the first studies to consider task-specific evoked psychological responses as part of a physical task-based SPA measure.

7. Deaf blindness or dual sensory impairment: What could be done differently to enable their societal participation?

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Introduction: Individuals with deafblindness or dual sensory impairment often experience participation restrictions due to difficulties with access to information, communication, mobility, and functioning. Participation challenges often lead to social isolation in their lives and put them at a higher risk of depression, anxiety disorders, and suicidal tendencies. There is a dire need to better understand what can be done differently to enable their participation in society. Yet, little evidence is present to inform the clinical practice.

Methods: The aim of the study was to identify ways to enhance participation of individuals with deafblindness or dual sensory impairment. The larger study involved a scoping study followed by a qualitative research where data was collected using qualitative interviews with 16 adults with deafblindness. Various accessible modes of communication were used to conduct qualitative interviews.

Results: Participants with deafblindness or dual sensory impairment identified access to information, communication, mobility, relationships, education and productivity, and recreation and leisure as important domains of life for their participation. They suggested to develop deafblind-specific rehabilitation services and assistive technology (e.g., hearing aids, cochlear implants, refreshable braille displays, magnifiers) to improve access to information, communication and social interactions, and thus to enable their societal participation.

Conclusion: Our findings suggest that the interventions should focus on enabling access to information for these individuals as it is available for their non-disabled counterparts. It is imperative for clinicians to design rehabilitation services to remove participation barriers located in the environment and focus on life domains that they value to enable the societal participation of those with deafblindness or dual sensory impairment.

8. Photovoice 2.0: Experiences and meanings of the TranXition Program

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More than 4% on young Canadian aged between 15-24 y.o live with a disability and will be confronted in adulthood with limitations in the areas of function, employment, housing, and intimate relationships. Transition-based services aim at facilitating the integration of youth into active citizenship. To date, such interventions have focused on the self-management of chronic medical conditions during the transfer of care from pediatric to adult health care settings. Yet, minimal consideration has been given to the holistic needs of youth with disabilities transitioning from childhood to adulthood, such as vocational skills, social functioning, and emotional well-being. Photovoice 2.0 consists in a participatory-action-research project that aims at conducting a qualitative evaluation of a transition-based service at Lethbridge-Layton-Mackay Rehabilitation Center: the TranXition program. Five youth, aged between 18-25 y.o., captured digital pictures, videos or audio recordings of their most significant experience in TranXition in order to provide feedback to the clinical team and improve the program. These captures provide insight into the potential of this group-based eXtreme rehab intervention to offer transformative real-life experiences that can reinforce self-awareness and self-advocacy in support of self-determination. Photovoice 2.0 therefore builds on experiential knowledge and youth engagement to develop a new epistemology for transition-based interventions. Through this innovative approach, the project is empowering youth with disabilities to identify the optimal structure that will facilitate their successful integration into society as active citizens. Evidence provided by the project leads to a more holistic approach in transition-based interventions and changes in knowledge which recognizes youthâ€™s strengths and potential for a fruitful and productive future.

9. Types d'interventions en activité physique, leurs caractéristiques et leurs effets chez les personnes ayant subi un traumatisme craniocérébral léger: Une revue de la portée

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Contexte : L'activité physique (AP) est une intervention recommandée pour la réadaptation d'individus présentant des symptômes persistants d'un traumatisme craniocérébral léger (TCCL). Cependant, les recommandations des guides de pratique clinique concernant les interventions par l'AP manquent de clarté et de spécificité quant aux paramètres d'AP (ex. : fréquence, intensité, temps, type, règles de progression) pouvant aider les experts cliniques à prescrire des interventions efficaces.

Objectifs : Les buts de cet examen de la portée (scoping review) sont d'identifier les interventions par l'AP utilisées dans la gestion des TCCL, de déterminer leurs caractéristiques et leurs résultats sur la santé.

Méthodes : Cette étude a suivi un cadre théorique en six étapes itératives (Levac et coll., 2010). Cinq bases de données ont été explorées (SportDISCUSS, MEDLINE, CINHAL, PsychINFO et EMBASE). Les documents faisant d'une intervention en lien avec l'AP qui incluait au moins un participant ayant un TCCL ont été inclus. Deux examinateurs indépendants ont sélectionné les articles et extrait les données à l'aide d'une grille d'extraction validée auprès d'experts cliniques québécois.

Résultats : 35 articles scientifiques ont été sélectionnés. 5 catégories d'intervention en AP ont été identifiées : multimodale (n=13), aérobie sous-maximal et progressif (n=12), aérobie constant (n=4), aérobie progressif par pallier (n=3) et Tai-chi (n=3). Les caractéristiques importantes permettant de reproduire ces interventions sont rapportées de façon variable (entre 5,71% à 94,29%). Peu d'études rapportent les stratégies motivationnelles utilisées (22,86%), l'adhérence à l'intervention (34,29%) et les effets indésirables (45,71%). Les études ont rapporté des effets positifs sur des structures et des fonctions du corps (ex. : améliore la tolérance à l'effort physique), les activités et la participation (ex. : favorise le retour au travail), sur des facteurs personnels (ex. : augmentation de l'estime de soi) et sur la qualité de vie.

Conclusions: Les résultats de cette étude fournissent des informations détaillées concernant les différentes approches, les caractéristiques et les résultats sur la santé des interventions par l'AP pour les individus présentant des symptômes persistants d'un TCCL. Les résultats sont utilisés dans la cocréation d'une intervention en AP en collaboration avec les experts cliniques du programme TCC du CIUSSS Centre-Sud.

10. Determinants that influence knowledge brokers' and opinion leaders' role to close knowledge practice gaps in rehabilitation: A realist review

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Despite available evidence to support optimal practices in rehabilitation, significant knowledge-practice gaps persist. Human Agents (HAs), including opinion leaders (OLs) and knowledge brokers (KBs), can enhance the success of knowledge translation (KT) interventions. Current evidence supports the impact of HAsâ€™ role in improving uptake of best practice among clinicians, however, there is limited guidance on the type of support needed for successful implementation of HAs in rehabilitation contexts. Evaluating the context and mechanisms influencing the impact of HAs may inform how to successfully implement HAs in rehabilitation clinical sites.

Objectives: This research aims to summarise the available evidence on the relationship between the context of the rehabilitation sites HAs work in and the mechanisms by which they influence outcomes.

Methods: We conducted a realist review to synthesize the available evidence on HAs as a strategy to promote evidence uptake among clinicians. A search was conducted across six databases up to October 2019 using MeSH term and keywords for KT, OL and KB, and rehabilitation. two independent reviewers extracted the data using a structured form adapted from the Workgroup for Intervention Development and Evaluation Research Recommendations. Data related to context, mechanism, and outcome, were organized into categories and analyzed using statistics. A context-mechanism-outcome configuration was created to build up a cumulative portrait of the desirable features of HAs.

Results: The search identified 2416 titles after removing duplicates and 17 studies were included in the analysis. Findings suggest a number of preferable features that may maximize the achievement of targeted outcomes. Regarding context, HAs should be a) embedded within their organization as "insiders"; b) identified as being able to fulfill this role; c) adequately skilled to perform the assigned roles; and d) appropriately-trained. Regarding mechanism, HAs should a) perform different knowledge brokering roles; and 2) use different KT interventions with suitable modes of delivery and parameters.

Conclusion: Findings of the synthesis converge to create a context-mechanism-outcomes configuration with suggestions for optimizing the utilization of HAs in rehabilitation contexts. These suggestions can help: researchers to maximize the impact of HAs as a KT strategy in their effectiveness studies; employers to optimally utilize HAs in rehabilitation settings; and HAs themselves, to maximize their influence among practitioners.

11. Personalized training improves upper limb recovery in patients with moderate-to-severe sub-acute stroke

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Introduction: Recent research has suggested that personalized training based on an individual's level of motor impairment may lead to better upper limb motor performance than a "one size fits all" approach. We described a 'capacity-based' training approach in which reaching practice was restricted to the range of elbow joint motion in which patients had full control over the movement, called 'the active control range', delimited by the tonic stretch reflex threshold angle. We hypothesized that patients who practiced reaching movements restricted to their active elbow control range would have better motor performance outcomes than those who practiced reaching without restricting the elbow range of motion.

Methods: 50 patients with sub-acute stroke had ten 50-minute training sessions over two weeks involving reaching activities using a virtual reality upper limb intervention. Thirty-three patients practiced reaching while elbow extension was limited by an upper-limb orthotic, while 17 patients practiced with unrestrained reaching. Kinematic and clinical measures of motor impairment were made before and after training as well as after a 1 month follow-up period.

Results: Results: After training, a greater proportion of participants who practiced reaching within their active control zone had improved scores on kinematic and clinical measures of motor impairment.

Conclusion(s): Conclusion: Restricting practice of reaching movements to a range of movement defined by the patient's own level of impairment may lead to better upper limb recovery in patients with sub-acute stroke. Whether this effect carries over after training is currently being assessed.

12. Comparison of arm movements directed to the body with those made to points in external space in healthy and post-stroke subjects

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Background: Upper limb movements after stroke are generally slower, more variable, and characterized by abnormal patterns of muscle activation. These atypical patterns may be related to deficits in spatial and temporal coordination between adjacent arm joints for movements made in two different FRs. Movements made within the framework of the person's own body are done in an egocentric FR and those made to a point in external space are done in an exocentric FR. The objective of this study was to identify higher-order motor control deficits in the production of these two types of movements in patients after stroke with different levels of severity.

Methods: Post-stroke and healthy individuals matched for age and sex were asked to perform two tasks consisting of reaching the hand without vision to targets in the ego- and exocentric FRs. In some trials, the trunk movement was unexpectedly blocked requiring a rapid adaptation of the upper limb joint rotations to maintain the hand movement stability (primary outcome measure).

Results: In both FRs, endpoint trajectories between free and blocked conditions were coincident in healthy but diverged in most post-stroke subjects. Trajectory stability was related to better interjoint coordination. Post-stroke subjects made slower movements and used more curved trajectories although had similar initial slopes of the endpoint trajectories compared to healthy subjects.

Conclusion: Post-stroke subjects had difficulty in adapting interjoint coordination according to task conditions. The results can be used to develop targeted rehabilitation strategies to improve sensorimotor integration and upper limb functional ability in stroke patients.

13. Creation of dance therapy for children with cerebral visual impairment: Results of a scoping review

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Dance Therapy (DT) seems to show promising effects on physical and cognitive function in children. However, there is no consensus on the parameters of DT (e.g. frequency of sessions), and there are no studies on the effects of DT in children with cerebral visual impairment (CVI). The Institut Nazareth et Louis Braille is interested in exploring the effects of DT in children with CVI who may also have cognitive or motor impairments. Because the literature is poor, it is challenging to propose innovative, global therapeutic interventions to enable these children to improve their activities and participation. DT is an innovative group intervention that could broaden the child's motor experiences, help them explore the surrounding space, and interact with others. With the goal of creating a DT intervention for children with CVI, this study aimed to systematically map the current state of the literature describing different group physical activity interventions and their outcomes for children with CVI.

Methods: Our scoping review follows a 6-step framework (Levac, 2010). The electronic search strategy conducted included 11 electronic databases such as MEDLINE, Embase, and CINAHL, and resulted in 1535 references. Documents reporting any type of physical or leisure group activity for individuals with CVI or children with low vision were included. The Template for Intervention Description and Replication (TIDieR) checklist was used to extract data from articles. An expert stakeholder group from the rehabilitation center will validate and enhance the results thereby establishing the consultation phase of the review.

Results: Data from 12 studies were extracted and analyzed. The results indicate a large variability of interventions that include different physical activities: balance function (n=1), physical/performance education (n=5, e.g. cardio respiratory), specific group sports (n=6, e.g. judo), social/mental wellbeing (n=2), and orientation and mobility (n=1). The duration of the interventions is also very variable. In addition to the 3 week-long summer camps, the interventions ranged from 2 hours to 10 months (e.g. 90 minutes once a week).

Conclusion: This information will inform the development of a DT intervention for these children and its future implementation and evaluation, including the identification of appropriate assessment tools.

14. Exploration des effets d'un programme de réadaptation multidisciplinaire sur l'activité "préparation des repas" chez des adultes cérébrolésées

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Introduction : Les troubles cognitifs et comportementaux après une lésion cérébrale peuvent entraîner des restrictions de participation. Un programme de réadaptation, pluridisciplinaire et holistique a été développé à la Pitié Salpêtrière. D'une durée de 7 semaines, il est offert à 4 participants vivant à domicile. Ce programme vise l'amélioration de la participation en associant des rééducations individuelles et des mises en situation écologiques (ex : réalisation de courses et préparation de repas [c.-à-d. intervention GUSTO], reprise des transports en commun, sport adapté...). L'efficacité du programme n'avait jamais été investiguée.

Objectif : Explorer les effets du programme de réadaptation sur l'activité « préparer les repas ».

Méthode : Mesures répétées pré (T1 et T2) et post programme (T3, T4, T5 jusqu'à 6 mois) avec 7 sujets uniques. Des outils de mesure validés tels que le Cooking Task (Chevignard, 2000), Profil des Activités Instrumentales (PAI) (Bottari, 2009) et la Mesure des Habitudes de Vie (MHAVIE) (Noreau, 2002), ont permis d'explorer les capacités à cuisiner durant deux sessions.

Résultats : Les méthodes « two standard deviation band » et « non-overlap of all pairs » (NAP) pour cas unique démontrent des différences significatives entre les périodes pré et post programme au nombre total d'erreurs au Cooking Task pour 6/7 participants ; 4 participants ont montré une amélioration significative immédiatement après le programme puis à 3 et 6 mois post. Six participants sur sept ont diminué de manière significative le besoin en aide (PAI). Quatre participants sur sept ont présenté une amélioration significative de leurs scores d'habitudes de vie en post programme (MHAVIE).

Conclusion : Suite à la participation au programme de réadaptation multidisciplinaire de sept semaines, des améliorations significatives ont été observées sur l'activité et la participation liées à la préparation d'un repas chez des adultes présentant une lésion cérébrale acquise et des troubles des fonctions exécutives. Les gains de traitement ont été maintenus chez la majorité des participants à 3 et 6 mois après le programme. Ces résultats encourageants offrent de nouvelles perspectives quant à l'utilisation et l'implantation de GUSTO auprès d'autres populations (ex. personnes âgées).

15. Assessment of vision, hearing and cognition in elderly individuals with low vision undergoing visual rehabilitation: Preliminary data analyses at baseline

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Age-related macular degeneration (AMD) is the most common cause of vision impairment (VI) in people aged 55 years or older and has been associated with lower cognitive function and a higher risk of dementia. Successful visual rehabilitation through the use of magnification devices has been shown to reduce effort when reading with AMD. This reduced effort may result in overall improved cognitive function due to increased stimulation of the senses through reading.

The present study aims to investigate the effect of reading rehabilitation on cognitive function of older adults with acquired VI over the course of 1 year (i.e.: baseline testing prior to rehabilitation, 6- and 12-month follow-up post-rehabilitation).

Twenty-nine older adults (age range 69-95 years, Mage = 83, SD = 8.55) with a VI (visual acuity ranging from 6/12 to 6/800 in the better eye) who were seeking reading rehabilitation completed tests regarding vision, hearing and cognition. Using the preliminary data, Pearson correlation coefficients were calculated across the different measures to assess the current status of our sample.

Overall, cognitive function (Montreal Cognitive Assessment (MoCA) Blind), was negatively associated with better hearing abilities (Canadian Digit Triplet Test), r = -0.500, p = 0.008. There was also a trend for significance between reading speed (MNRead â€“ words per minute) and cognitive functioning (Montreal Cognitive Assessment (MoCA) Blind), r = 0.454, p = 0.077.

These correlations indicate that better sensory function is positively associated with better cognitive function. Follow-up with these participants in 6 and 12 months will clarify the effect of reading rehabilitation on improving or protecting cognitive abilities.

16. Eccentric-viewing training for reading: Does it transfer to improved balance in the visually impaired?

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Introduction: Although fixation stability is frequently targeted and trained during visual rehabilitation here in Montreal and beyond, fixation stability training has yet to be investigated in terms of improvements beyond reading. Previous work has shown that fixation stability is a visual parameter that contributes to balance control. Improved fixation, as a consequence of eccentric-viewing training, may provide additional benefits in improving balance. Here, researchers will collaborate with vision rehabilitation specialists to quantify fixation stability before and after the eccentric viewing training, and determine if this can lead to increased use of visual information to improve balance. If so, this would provide quantifiable outcome measures to evaluate client progress and incentives to expand and recommend eccentric viewing training in low vision populations.

Method: Clients of the Lethbridge-Layton-Mackay Rehabilitation Centre with a visual acuity of 20/200 of better in the best eye were recruited to participate in a 6-week eccentric-viewing training program. Pre- and post-testing included measurement of reading ability using the Pepper Visual Skills Reading Test and fixation stability using the Optos Optical Coherence Tomographer/Scanning Laser Ophthalmoscope. Balance was assessed using the Timed Up-and-Go, the Dynamic Gait Index and the Activities-Specific Balance Confidence Scale. Postural control was measured using the Nintendo Wii Balance Board.

Results: To date, five clients have completed the program and another five are half way through. Of those who completed the program, all were successful in relocating their fixation and fixation stability improved in all but one. According to the Pepper, reading speed did not improve, but accuracy did. All participants improved in Timed Up-and-Go performance and three individuals had improved postural control while using their PRL.

Discussion: Preliminary results show that improvement in fixation stability through eccentric-viewing training can lead to improvements in reading accuracy and balance performance. Future work will include increasing sample size to reach statistical power and increasing the length of the course to include orientation and mobility training with the PRL.

17. L'intervention SAAM: Une intervention de psychoéducation efficace pour diminuer les symptômes post-commotionnels en phase post-aiguë

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Introduction: Le traumatisme craniocérébral léger (TCCL) s’accompagne de symptômes post-commotionnels (SPC) persistants dans environ 15 % des cas. Bien que les guides de pratique recommandent d’intervenir rapidement pour prévenir et traiter les SPC, il n'existe encore aucune intervention efficace en phase post-aiguë qui soit basée sur un modèle théorique solide et validé. Une intervention multidimensionnelle de 4 séances individuelles traitant chacune un SPC : Sommeil/fatigue, Attention, Anxiété/humeur, Mémoire/organisation, a donc été développée (intervention SAAM). Basée sur une approche biopsychosociale (Hou et al., 2012) et adaptée au contexte québécois, elle fournit des outils pratiques de gestion des SPC et est conçue pour fournir de la réassurance, renforcer des objectifs individualisés et promouvoir le retour aux activités.

Objectif: Démontrer l’efficacité de l’intervention SAAM pour diminuer les SPC, à l’aide d’un essai clinique randomisé (#NCT01947504).

Méthode: 25 patients (38.92 +/- 12.02 ans) se plaignant de SPC et recrutés entre 1 et 3 mois post-accident (55.8 +/- 19.20 jours), ont été randomisés en 2 groupes: Expérimental, qui recevait le programme SAAM (1/semaine X 4 semaines) (n = 13) et le groupe Liste d’attente qui ne recevait pas l’intervention durant ces 4 semaines (n=12). Les analyses principales portent sur les résultats au Rivermead post-concussion questionnaire (RPQ) administré avant et après l’intervention. Il s’agit d’un questionnaire mesurant l’intensité ressentie de 16 SPC. Trois sous-groupes de symptômes du RPQ sont explorés secondairement : somatiques, émotionnels et cognitifs.

Résultats: Une ANOVA à mesures répétées a montré une interaction Groupe X Temps au seuil de la significativité pour le score total au RPQ [F (1, 22) = 4.224; p = .052]. L’analyse des sous-scores du RQP ne met en évidence aucune interaction Groupe X Temps significative pour les symptômes somatiques (p =.118) et cognitifs (p =.442). L’interaction est significative pour les symptômes émotionnels [F (1, 22) =5.826 ; p = 0.025].

Conclusion: L’intervention SAAM constituée de 4 séances offertes en phase post-aiguë, diminue les SPC. Plus précisément, elle démontre nettement son efficacité pour la réduction des SPC émotionnels. Ces résultats encouragent la poursuite de l’étude à plus grande échelle afin de confirmer et préciser les effets de cette intervention.

18. Améliorer le sentiment de compétences professionnel et les pratiques d'évaluation vocale par le biais d'une communauté de pratique pour les orthophonistes du Québec

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Contexte: Les orthophonistes travaillant avec une clientèle générale ont moins d'opportunité de développer leur expertise dans le champ plus restreint de la voix. Dans un monde où les publications sont omniprésentes, mais où le temps de lecture est limité, la question de savoir comment transférer de manière optimale les connaissances afin de faire évoluer les meilleures pratiques cliniques est cruciale. Dans ce projet, nous étudions si une communauté de pratique (CdP) visant à normaliser l'évaluation vocale pourrait améliorer les pratiques cliniques et accroître la confiance des professionnels des orthophonistes au Québec.

Méthodologie: Trente-deux orthophoniste et étudiants en orthophonie avec des niveaux d'expertise et d'expérience clinique variables en thérapie vocale participent à un CdP de cinq mois dirigés par une orthophoniste spécialisée en voix assistée de deux chercheurs du domaine. Tous les membres sont invités à participer à six réunions en ligne d'une heure et à une réunion physique de quatre heures. Ils remplissent un questionnaire documentant leurs pratiques et leur confiance professionnelles. Onze membres principaux participent également à une interview avant et après la CdP. Les sujets liés à l'évaluation vocale sont abordés lors des réunions virtuelles et physiques, tandis que des discussions de forum ont lieu entre les réunions.

Résultats et conclusion: Les résultats du questionnaire pré-CdP montrent que le nombre d'années d'expérience moyennes de nos membres en matière de thérapie vocale est de 5,65 (min: 0, max: 40). Les évaluations les plus susceptibles d'être effectuées étaient les analyses auditivo perceptuelles, l'auto-évaluation par le patient et les analyses acoustiques, qui ont également été jugées les plus utiles. Dans l'ensemble, les membres ont un niveau de confiance modéré en leurs capacités de thérapeutes vocaux, mais ils ont un faible sentiment d'appartenance à une communauté de voix professionnelle. Nos résultats antérieurs à la CdP montrent qu'il est possible d'améliorer tant les meilleures pratiques que la confiance des professionnels. Les résultats post-CdP illustrant comment ces variables ont changé avec la CdP seront présentés.

19. Crise des opioïdes : Quels sont les impacts pour les personnes souffrant de douleur chronique non-cancéreuse?

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Introduction : Cette étude avait pour but d'évaluer les impacts de la crise des opioïdes chez les personnes qui souffrent de douleur chronique non-cancéreuse (DCNC). Une enquête a été menée dans deux provinces canadiennes, la première étant perçue comme la plus touchée par la crise des opioïdes (Colombie-Britannique (CB)) et la seconde comme la moins touchée (Québec (QC)).

Méthodes : Des personnes atteintes de DCNC (≥ 3 mois) vivant au QC et en CB ont été invitées à compléter un questionnaire en ligne entre janvier et avril 2018. Ils ont été ensuite divisés en trois groupes: utilisateurs actuels d'opioïdes, utilisateurs intermittents (ont utilisé des opioïdes au cours des 12 derniers mois mais qui ont cessé), et non-utilisateurs (n'ont pas utilisé d'opioïdes au cours des 12 derniers mois).

Résultats : Au total, 1187 personnes ont répondu au questionnaire, 921 du QC et 266 de la CB. L'âge moyen était de 49 ±14 ans, 80% étaient des femmes et la durée médiane de leur douleur était de 12 ans. La proportion de non-utilisateurs d'opioïdes était significativement plus élevée au QC qu'en BC ($p<0,001$). Par rapport aux participants en BC, ceux du QC craignaient davantage le risque d'addiction ($p<0,001$) alors que ceux en BC étaient davantage concernés par la stigmatisation associée à la prise d'opioïdes ($p=0,007$). Parmi les utilisateurs actuels d'opioïdes, la proportion de ceux qui se sont fait proposer de cesser leur médication était significativement plus élevée en CB qu'au QC ($p=0,007$). La proportion des participants chez qui on avait cessé les opioïdes au cours de la dernière année et ce, sans leur accord, était plus du double en CB par rapport au QC ($p=0.030$). Enfin, la couverture médiatique de la crise des opioïdes était perçue comme ayant un impact très négatif pour les personnes atteintes de DCNC, cette perception étant encore plus prononcée en CB qu'au QC.

Conclusion : La crise des opioïdes, la couverture médiatique qui l'a entourée de même que lignes directrices de prescriptions qui ont suivi ne sont pas sans conséquence pour les personnes qui souffrent de DCNC. Davantage de recherche est nécessaire afin d'en saisir toutes les subtilités et d'y pallier.

Projet subventionné par le Réseau Québécois de recherche sur la douleur (RQRD) et le Fonds de recherche du Québec - Santé (FRQ-S)

20. Using integrated KT approaches to promote inclusive physical and leisure for children with disabilities

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Introduction: Physical activity is critical to the health of children. However, resources and policy interventions that facilitate participation are usually limited for children with disabilities. We detail the use of an integrated Knowledge Translation approach to conduct a rapid review to inform policy on physical activity promotion for children with disabilities.

Research Method: Based on priorities established by grassroots organizations in relation to a policy document, we identified evidence-based practices regarding capacity building, inclusion and access and supportive environments. We then used a rapid review methodology to support a knowledge translation project around community-based interventions promoting physical activity participation for children with disabilities.

Results: We followed an analytical framework for evidence-informed public health, which involves translating the best available evidence along with other forms of knowledge that have been systematically collected, including articulating the practice-based public health challenge and adapting the evidence to the context (Evidence-Informed Public Health, 2018). We thematically analyzed the evidence from the rapid review and we transformed those findings into briefs for different targeted audiences: policy makers and community/grassroots organizations. We also involved stakeholders (community organizations, health and education professionals) to select, validate, and tailor the information through the review process. Structured evaluation through surveys and interviews indicated that participants gained information to support ongoing projects and fuel discussions with colleagues and appreciated the format and content of the policy brief as a reference tool for their work.

Recommendation and Implications for Policy Practice: This rapid review and active policy engagement process can serve as a reference for researchers to engage stakeholders and use evidence to inform practice at the policy levels and to create research evidence for real impact for populations.

21. Étude qualitative de l'impact de la crise des opioïdes chez les personnes souffrant de douleur chronique non-cancéreuse

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Introduction : Face à la mortalité liée aux surdoses d'opioïdes, des recommandations limitant leur prescription ont été émises par plusieurs autorités sanitaires Nord-Américaines. Ces mesures peuvent représenter un bouleversement pour les personnes souffrant de douleur chronique non-cancéreuse (DCNC). De plus, la médiatisation de la crise des opioïdes a favorisé la confusion entre les méfaits liés aux sur-prescriptions et les décès par surdoses d'opioïdes contrefaits vendus dans la rue. Cela peut engendrer des conséquences négatives pour les personnes souffrant de DCNC, compte tenu de la réprobation sociale existant envers les personnes utilisatrices de drogues illicites.

Objectif : L'objectif de cette étude est de comprendre l'impact de la crise des opioïdes sur les personnes souffrant de DCNC dans une province relativement épargnée par la crise (Québec) et dans la province la plus touchée (Colombie Britannique).

Méthodologie : Il s'agit d'une étude qualitative par entrevues téléphoniques semi-dirigées approfondies auprès de personnes souffrant de DCNC au QC et en CB. Les personnes participantes ont été recrutées parmi les répondant·es à un sondage en ligne (volet quantitatif du projet). Nous avons effectué une analyse thématique des verbatim d'entrevues.

Résultats : Au total, 22 participant·es (11 dans chaque province) ont été recruté·es entre mars et juillet 2019: 12 femmes, 10 hommes, âgé·es de 20 à 70 ans. Quinze participant·es avaient un traitement opioïde pour leur DCNC. Plusieurs participant·es affirmaient vivre une intensification de la stigmatisation depuis la médiatisation de la crise des opioïdes. Les préjugés vécus par les personnes venaient autant de leur entourage familial et professionnel que du milieu médical. La crise des opioïdes a également pu affecter leur prise en charge puisque certain·es se sont vu imposer une diminution de leur prescription sans qu'une solution de remplacement ne leur soit proposée pour soulager leur douleur. Enfin, plusieurs ont fait part de leur crainte et de celle de leurs proches face à la dangerosité des opioïdes.

Conclusion : Des campagnes de sensibilisation visant le grand public et les professionnel·les de santé doivent être mises en place pour contrer les effets délétères de la crise des opioïdes chez les personnes souffrant de DCNC et leurs proches.

Projet subventionné par le Réseau Québécois de recherche sur la douleur (RQRD) et le Fond de Recherche Québec Santé (FRQS).

22. Co-construire des outils efficaces de transfert des connaissances pour une utilisation appropriée des aides de la mobilité

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Introduction: La prévalence des usagers d'aide à la mobilité (fauteuil roulant, base roulante) augmente rapidement avec le vieillissement de la population canadienne. Ces derniers comptent souvent sur l'assistance de leurs proches (aidant informel) ou du personnel soignant (aidant formel) lors de l'utilisation de leur aide à la mobilité. Les aidants doivent fréquemment compter sur l'auto-apprentissage de l'utilisation des aides à la mobilité ainsi que sur l'installation des composantes. Dans une étude préalable, le besoin de capsules vidéo avait été identifié comme outil principal d'apprentissage souhaité par les aidants.

Objectif: Outiller les aidants à travers la conception et la diffusion de capsules vidéos éducatives, pour améliorer les connaissances concernant l'utilisation adéquate et sécuritaire des aides à la mobilité.

Méthodologie: Un groupe d'expert regroupant des aidants formels et informels ainsi que des ergothérapeutes a proposé des sujets de capsule vidéo. Par la suite, un processus de sélection basé sur la Technique de Recherche d'Information par Animation d'un Groupe Expert (TRIAGE) a permis de prioriser les sujets de capsules à développer et leur mode de diffusion. Les scénarios des capsules ont été développés en collaboration avec les experts cliniques.

Résultats: Les critères de sélection des sujets de capsules ont été établis par le groupe de travail (ex. audience ciblée, type de contenu, durée). Au total 27 sujets de capsule ont été discutés, 13 ont été conservés et regroupés selon 3 niveaux de priorité : P1- Ajustements de l'aide à la mobilité (8 capsules, ex: Comment ajuster les appuis-bras du fauteuil?). P2- Transferts (3 capsules, ex: Quand mettre et enlever l'appui-tête dans la séquence d'un transfert au lève-personne?). P3- Réparation et réévaluation (2 capsules, ex: Comment reconnaître les signes qui indiquent le besoin d'une réévaluation?). La principale stratégie de diffusion retenue fut la projection en continu dans les salles d'attente ou lors des formations continues des préposés se déroulant sur téléviseur mural avec prise USB.

Conclusion: Les capsules seront distribuées à plusieurs centres de réadaptation et centres de soins de longue durée. Une étude ultérieure permettra de mesurer leur impact sur les connaissances des utilisateurs d'aide à la mobilité et aidants sur la plate-forme MOvIT+ (www.movitplus.com)

23. Telerehabilitation to increase access to rehabilitation services for youths with arthrogryposis: Preliminary data

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Introduction: Arthrogryposis multiplex congenita (AMC) is characterized by limited joint range of motion (ROM) and muscle weakness leading to functional limitations in daily life activities. Surgical and non-surgical interventions can improve patients' functional status but contractures often recur. Therapeutic exercises have the potential to limit the recurrence of contractures by maintaining ROM and muscle strength. One challenge for the clinician is the difficulty in providing these therapeutic exercises on a frequent basis because, given their rare conditions, youth with AMC often live far from subspecialized health care centres. To overcome this challenge, innovative telecommunication technologies can be used to provide rehabilitation services (telerehabilitation). OBJECTIVES: 1) To assess the feasibility of using telerehabilitation to provide a home exercise program (HEP) for youth with AMC. 2) To assess the effectiveness of the HEP.

Methods: Seven youths with AMC were recruited. ZOOM, a teleconference application, was used for telerehabilitation interventions. Participants completed questionnaires related to their health condition and were assessed pre-and post-intervention by rehabilitation therapists to measure ROM and muscle strength. Therapists established personalized objectives to generate the 12-week HEP. Follow-ups occurred every 3 weeks to adjust the HEP and ensure exercises were well performed. For preliminary analyses, feasibility was assessed looking at participants' satisfaction in the final questionnaire and compliance to telerehabilitation meetings. For the effectiveness, we evaluated what patients reported in their final questionnaires and assessment.

Preliminary results: Five participants completed the intervention (mean: 15.4 years). Preliminary feasibility data showed that all participants would be happy to use telerehabilitation again and four reported they save money using this approach. An attendance rate of 100% to the telerehabilitation meetings was observed. For the effectiveness of the HEP, individual objectives aimed at increasing muscle endurance and force as well as decreasing pain. Improvement in balance, muscle endurance and muscle force were noted.

Conclusions: Preliminary results demonstrate that telerehabilitation is a feasible approach to provide rehabilitation interventions with participants having different functional levels and living across Canada. Another area to explore is the use of this modality for youths with other chronic conditions, and as pre- and post-operative intervention to improve surgery outcomes.

24. Which factors can predict the use of a head-mounted low vision aid?

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Introduction: Several studies have examined the multifactorial decision process around the use of assistive technologies. In the context of visual impairment, little is known about why some device users experience head-mounted devices, such as eSight Eyewear, as a success while others decide not to use them in the long-term. The goal was to identify which factors predict a change in device use among current eSight owners, in order to tailor rehabilitation interventions that can reduce device abandonment.

Methodology: Using a cross-sectional design, participants were recruited from 567 eSight Eyewear owners to complete a 45-min survey online consisting of 94 questions that were adopted from two standardized questionnaires as well as some items developed for this study. Using current device use/non-use as a binary outcome, logistic regression analyses were performed to identify the variables that most comprehensively predicted the highest percentage of variance in eSight use.

Results: The 109 (19.2%) respondents with complete data had a mean age of 47.7 years (SD=25.4, range: 9-96), 61 (54%) were females, 79 (73%) resided in the USA, 51% self-reported a central, 6% a peripheral and 45% a general visual impairment. The final four regression model alternatives accounted for 84.7%, 68.7%, 83.7% and 64.7% (Nagelkerkeâ€™s pseudo R2) of the variance in eSight use, respectively. The most consistently predictive variables of increased use across models were higher scores on the Psychological Impact of Assistive Devices Scale, the Quebec User Evaluation of Satisfaction with assistive Technology scale, and those who reported the absence of headaches while utilizing eSight Eyewear.

Main outcomes: None of the traditionally available clinical variables, such as patient demographics, ocular or general health information, or low vision rehabilitation experience were predictive of abandoning eSight Eyewear. However, the administration of standardized device impact questionnaires appears to provide relevant information. Such measures may be able to identify device users that could benefit from individualized attention during device training and low vision rehabilitation provision to reduce the probability of device abandonment.

25. Trajectoires d'évolution fonctionnelle d'adultes ayant subi un TCC et recevant des services de réadaptation: Le projet Mayo-Portland Adaptability Inventory (MPAI-4)

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Introduction: Cette étude décrit une approche de transfert de connaissances dans un continuum de services en traumatologie, maillant des contributions cliniques, administratives et de recherche jetant les bases d'une mesure systématique de l'évolution fonctionnelle et de la participation sociale chez des adultes en réadaptation post-TCC.

Objectif: Évaluer l'évolution fonctionnelle et la participation sociale d'adultes TCC en fonction du parcours de réadaptation post-aiguë suivi (réadaptation interne-externe, externe seulement).

Méthodologie: Le MPAI-4 comporte trois sous-échelles (Capacités, Adaptation, Participation) et donne lieu à des index spécifiques et un score total reflétant le niveau général d'adaptation/participation sociale d'adultes TCC. La version canadienne-française du MPAI-4 (Malec & Lezak, 2003; McKerral et al., 2014) a été validée (Guerrette & McKerral, en préparation) et est implantée dans les Programmes TCC de quatre établissements de réadaptation de la grande région de Montréal. Le MPAI-4 est complété pour tous les adultes TCC en début et fin de réadaptation, et les données MPAI-4 générées à partir des quatre centres de réadaptation sont compilées dans une base de données maître.

Résultats: Actuellement, plus de 750 MPAI-4 ont été complétés dans l'ensemble des sites et les résultats obtenus montrent une amélioration significative des scores entre le début et la fin de la réadaptation. Des comparaisons de scores MPAI-4 ont été menées entre les différents parcours de réadaptation suivis et entre différents groupes de sévérités de TCC. L'évolution du statut du travail entre le début et la fin de la réadaptation pour différentes sévérités de TCC ainsi que l'évolution des items MPAI-4 les plus sévèrement touchés en début de réadaptation en fonction du parcours de réadaptation suivi sont également exposées. Conclusions: Grâce aux données MPAI-4 recueillies jusqu'à présent, nous obtenons un premier portrait des tendances d'évolution fonctionnelle et de participation sociale d'adultes TCC en réadaptation. Une telle prise systématique de mesures communes à l'aide du MPAI-4 dans plusieurs centres de réadaptation nous permet entre autres de mieux comprendre l'évolution fonctionnelle des adultes TCC et les facteurs qui y sont reliés, en plus de soutenir l'élaboration des pronostics de récupération et éclairer la prise de décision clinique.

26. PLAY: Participation in Leisure through Accessible plaYgrounds

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Everyday, over 200,000 children with a disability in Canada are denied the right to do what every other child is doing: playing. This is happening in public playgrounds, parks, community centers, museums, arts and sports venues – public spaces that should be owned, used, explored and enjoyed by all. Play contributes to the physical, cognitive, social, and emotional development of all children. Playgrounds are not only an important place for physical activities but also a space for children to meet and interact with other children, develop communication and social abilities, and to develop a sense of community and ownership of their neighborhood and public areas. Play is a human right, as stated by the United Nations Conventions on the Rights of the Children and on the Rights of Persons with disabilities. Access to public playgrounds is important for children with disabilities as much as for other children; yet, most current public play spaces deter children's full participation due to physical and social barriers.

The purpose of this study was 1. to identify the existing policy-related original articles, acts, legislations and guidelines related to inclusive playgrounds; 2. to gather stakeholders' opinions on the current situation of playgrounds, including key recommendations, needs and barriers to establish directions in creating inclusive playgrounds for children with disabilities. Stakeholders in this study were children with disabilities and their families, clinicians, educators, orderlies (school's caregivers). The targeted children had different disabilities (motor, communication, learning, intellectual, auditory, behavioral, visual) from 2 schools for children with disabilities and one rehabilitation centre in Montreal.

Totally 25 research articles and 10 international and national policy documents were found. Ninety-seven above-mentioned stakeholders were questioned. We concluded that despite the importance of play and the rights of children with disabilities to be provided inclusive playgrounds, there is not enough policy and guidelines to mandate the provision of that. All stakeholders including children with disabilities, their families, researchers, healthcare workers, educators, policy makers, designers should be involved in the planning and design of inclusive playgrounds. The physical, social and political environmental factors should be addressed carefully in order to make playgrounds inclusive.

27. Early mobilization in people with acute cardiovascular disease reduces discharge to a rehabilitation facility

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Introduction: Early mobilization (EM) in the intensive care unit is the first stage of the rehabilitation process and is recommended by critical care societies. However, there is little known about outcomes of people with acute cardiovascular disease undergoing EM.

Methods: Consecutive admissions to a tertiary-care Cardiovascular Intensive Care Unit (CICU) prior to and following implementation of a structured nurse-driven EM program were reviewed. The Level of Function (LOF) Mobility Scale, which ranges from 0 (bed immobile) to 5 (able to walk > 20 meters), was used to measure and guide mobility. The primary outcome was discharge to a healthcare facility (rehabilitation or long-term care facility).

Results: There were 1,489 patients included in the analysis (pre-intervention, N=637; intervention, N=852). There were no differences in age, sex, or admission for ischemic heart disease between the groups (overall mean age 68.1 ± 16.1 years; 39.3% female). The most common admission diagnoses were acute coronary syndrome (36%, N=536), heart failure (13.3%, N=198) and atrial fibrillation (10.0%, N=149). In the intervention cohort, more than one-quarter (N=222; 26.1%) had at least mildly impaired pre-hospital functional status. The LOF was 4.6±0.7 pre-hospital, 3.2±1.4 on admission, and 4.2±0.9 on CICU discharge. Half of patients (51.6%; 440/852) increased their LOF by ≥1 during CICU admission. The adverse event rate was 0.3% (23 events/8,417 mobilization activities) with no life-threatening adverse events, patient falls, tube/line dislodgements, or injuries to healthcare personnel. The intervention group, compared to the pre-intervention group, was less likely to be discharged to a healthcare facility (9.6% vs. 12.2%, $P<0.007$). When adjusted for age, sex, and comorbid illness, admission LOF was a predictor of discharge to healthcare facility (OR=0.72; $P<0.001$) and hospital length of stay ($P<0.001$). The intervention group compared to the pre-intervention group had a lower rate of in-hospital death (4.2% vs. 6.8%; $P=0.04$) and 30-day post-hospital discharge ER visit ($P=0.003$), although there was no difference in CICU or hospital length of stay ($P=0.63$ and $P=0.54$, respectively) or 30-day readmission rates ($P=0.14$).

Conclusion: A nurse-driven EM program in people with acute cardiovascular disease resulted in decreased likelihood of discharge to rehabilitation centre and reduced in-hospital mortality.

28. Dietary protein intake in older adults undergoing cardiac surgery

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Older adults undergoing major surgery have increased protein requirements in the postoperative period, but there are limited data describing actual protein intake following cardiac surgery.

Methods and results: We performed a prospective sub-study within a registry of older adults 60 years of age undergoing cardiac surgery at a tertiary care centre. A dietitian administered a food frequency questionnaire before surgery and 1 and 4 months after surgery. In-hospital food intake was recorded by direct observation for 3 days in the early postoperative period. Food intake was analyzed to calculate the protein intake per kilogram of body weight per day (g/kg/d) during the three phases of care, compared to the dietary reference intake. Frailty was measured by a questionnaire and physical performance tests before surgery. There were 22 patients (8 females, 14 males; 59% frail) enrolled in the study with a mean age of 72.0 " 7.8 years. The mean protein intake was 1.3 " 0.5 g/kg/d, 0.7 " 0.3 g/kg/d, and 1.3 " 0.6 g/kg/d in the preoperative, early postoperative, and post discharge periods, respectively ($P < 0.0001$ for early postoperative compared to other periods). Compared to the targeted dietary reference intake of 1.5 g/kg/d, there was a mean protein deficit of 0.8 g/kg/d in the early postoperative period. Only one patient (5%) met the protein dietary reference intake in the early postoperative period.

Conclusion: In older adults undergoing cardiac surgery, dietary protein intake was substantially lower than the recommended target in the early postoperative period. Strategies to improve protein intake, particularly in frail older patients, may be considered as a therapeutic target.

29. What factors influence the experiences of older adults who pursue braille training? A qualitative study

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The prevalence of age-related sight loss continues to increase, and reading-related difficulties are among the most common reasons for referral to low vision rehabilitation services. Braille is an option for clients, but little is known about the impact of aging on braille reading performance. While there is a substantial body of literature on braille literacy in childhood, there are few evidence-based protocols designed to meet the unique needs of older adults who experience declines in tactile, motor and cognitive abilities throughout the normal aging process.

This study investigated the experiences of older adults who learned braille later in life and the facilitators and barriers encountered throughout this process. Semi-structured qualitative interviews of 14 participants from Canada (age 40-72, Mdn=55.5, 7 female) who learned braille between the ages of 33 and 60 (Mdn=46.5) were conducted. Data collection continued until theoretical saturation. Interviews were transcribed verbatim, inductively coded by two independent researchers (Gwet's agreement coefficient=.988) and analyzed using the phenomenological qualitative approach.

Personal factors influencing the decision to learn braille included participants' prior perceptions towards braille, the desire to regain independence, and the belief that technology could not meet all needs. Previous identity and learning experiences (positive or negative) emerged as influential personal factors. Public attention posed a barrier to participants still adjusting to sight loss, while the willingness of family to learn some braille functioned as a source of support. The lack of training resources, the availability and cost of braille materials and devices for adults, and the perceived reluctance of some professionals to provide braille training due to beliefs about braille and aging were identified as environmental barriers. Environmental facilitators included access to other braille users, either as training professionals or peers.

Though prior identity and learning experiences emerged as important influences, these factors have not historically been considered within existing braille rehabilitation paradigms. These results also highlight the need to explore the influence of perceptions towards braille among professionals and the availability of resources for older braille learners. This research supports the development of evidence-based strategies to better meet the unique needs of older adults who pursue braille training.

30. Analysis of lumbo-pelvic coordination variability during a sit-to-stand task in adults with low back pain

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Introduction: Evidence suggests that individuals with chronic low back pain (CLBP) move differently than healthy subjects. Variability is a functional part of everyday movement; however, deviations from the "optimal range" are associated with a state of pathology. Too little variability may represent an overcompensation in response to pain, while increased variability may indicate an inability to produce a robust movement pattern.

Objective: To compare variability of lumbo-pelvic coordination during a sit-to-stand (STS) task between CLBP and healthy groups.

Methodology: Participants were adults with CLBP (n=16) and healthy controls (n=21). Joint angles for the upper (T12-L3) and lower (L3-S1) lumbar spine, and hips, were measured using an electromagnetic motion capture system during 10 STS trials. Phase angle analysis determined coordination and variability of the (i) Hip-L3S1, and (ii) L3S1-T12L3 segments, deconstructed into 4 periods (start/up/down/end). T-tests compared coordination and variability of the full task between groups, and a mixed ANOVA compared the effects of group (CLBP/healthy) and period for the two segments.

Results: Significant differences ($p<0.05$) between groups for coordination (LHip-L3S1 and T12L3-L3S1) and variability (LHip-L3S1) were found for the full task, showing increased variability and less in-phase coordination in the CLBP group. Similarly, a significant interaction ($p<0.05$) between phase and group revealed more variable, less coordinated movement behavior in the CLBP group during the start and end phases for the LHip-L3S1 segment. A significant main effect of period ($p<0.001$) on coordination and variability in both segments showed increased variability at the start and end periods, independent of group.

Conclusion: The CLBP group showed increased variability and less in-phase lumbo-pelvic coordination across the full STS motion and during the beginning and end of the task. This suggests more aberrant patterns of lumbo-pelvic coordination during STS in CLBP and may represent a target for intervention.

31. The impact of context-based interventions on participation of children with disabilities: A systematic review

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Background: Participation in the community is essential to the development of a child's social skills, sense of competence and identity and a key component of physical and mental health for children with disabilities and their families. Barriers to participation have been identified and include personal and environmental factors. Rehabilitation interventions can improve participation among children with disabilities, however, current evidence focuses primarily on interventions catered to address barriers that are specific to one single individual. Limited information exists on the availability and efficacy of context-based interventions that target population-level changes in broader settings.

Objectives: The main objective of this systematic review was to gather existing evidence on the impacts of context-based interventions on the participation of children with disabilities. Methods: Search was conducted following the PRISMA guidelines with the support of a librarian in the Medline, CINAHL, EMBASE, and PsycINFO databases. Two reviewers independently screened the identified articles and retained articles for data extraction, following the pre-determined inclusion criteria. A third reviewer was consulted to resolve conflicts through all steps. Data was analyzed quantitatively for description and qualitatively due to heterogeneity of methods and study designs identified.

Results: 78 articles were retained for the full-text review. Studies presented extremely heterogeneous fields of knowledge, use of methodologies, target populations, and outcome measurement, preventing polling of quantitative data and comparison of effectiveness. The types of context-based interventions promoting participation in leisure were also very heterogeneous in nature. In a qualitative analysis of results, interventions were grouped into context-based interventions designed for individual level but with context-level impact) and those targeted by definition at the systems level. Individual-level interventions included those focused on patient-centered goals, modifying built environments and attitudes of specific places based on the needs of one single child. The second category of interventions focused on interventions at the systems-level and included large public health campaigns, leisure policy impact analysis, and government level programs in different jurisdictions.

Conclusion: Context-based interventions described in the health literature are still largely focused on individual-level changes. There is a vast body of literature describing environmental factors at the systems-level that are related to participation, but do not test interventions to overcome environmental barriers. Systems-level research should be developed with rigorous scientific methods to inform changes at the societal level that can have an impact for a larger population.

32. Towards developing mobility ontology in acquired brain injury (ABI) population: Interactive knowledge translation

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Introduction: Our group is developing BRILLIANT (Biomedical Research and Informatics Living Laboratory for Innovative Advances of New Technologies) online portal as part of digital infrastructure to collect self-administered questionnaires and clinical data to support decision making in rehabilitation care. To tailor mobility interventions to patient sub-groups, a common language for mobility measures is needed to link data from multiple sources. Implementation science guidelines support an integrated knowledge translation approach to identify a core set of mobility measures to ensure their use in rehabilitation.

Objective: To identify optimal measures and factors limiting or enhancing mobility in real-world environments to be included in the BRILLIANT portal and electronic medical record (EMR); and to explain variability in mobility for people with ABI, as perceived by clinicians and patients.

Methods: As a first step to develop the ontology, an umbrella review of systematic reviews of mobility measures in ABI population was conducted. An evidence-based educational interactive meeting methodology was used with participants from the Centre de RÃ©adaptation Constance-Lethbridge, Institut de readaptation Gingras Lindsay de Montreal, and Jewish Rehabilitation Hospital. A purposive sample of clinicians and patients were recruited. Once consented, participants took part in a 2-hour focus group, and responded to questions related to ABI care and mobility evaluations and interventions. Inductive content analysis using the International Classification of Functioning, Disability and Health framework (ICF) was performed to explore emergent themes.

Preliminary Results: The umbrella review identified 188 mobility measures categorized based on the ICF at body function and structure (28%), activity and participation (76%) and environmental factors (24%). A total of 19 clinicians and 10 individuals with ABI, representing a wide range of ages and disease duration discussed topics related to mobility evaluations, treatments and factors that influence mobility in ABI population. The final results will be presented.

Discussion: Suggesting a holistic approach to mobility among ABI population, the study results indicate the importance of developing an ontology for mobility. Mobility ontology will provide a common language for capturing mobility data in BRILLIANT portal and EMR. It will inform Machine Learning to improve our ability to predict intervention content and mechanisms of action.

33. The Comprehensive Coordination Scale (CCS): A new tool to assess movement quality and performance

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Background: Motor coordination, the ability to produce context-dependent organized movements in both spatial and temporal domains, is impaired after neurological injuries and compromises the performance of everyday activities. Clinical assessments of coordination mostly quantify endpoint performance variables (i.e., temporal qualities of whole arm movement) but not movement quality (i.e. displacements of trunk and arm joints). This distinction is necessary to identify motor compensations from true recovery. Kinematic analysis better captures movement quality, but it can be challenging to implement in clinical practice due to the cost and expertise required. Observational kinematics can help to address the gap in objectively assessing coordination. The purpose of this study was to develop a comprehensive tool to measure coordination of multiple body segments that can be quantified by observational kinematics at both both domains.

Methods: The tool consisting of 6 coordination sub-tests was constructed from tests used in clinical practice or research. The first version was sent to a group of six experts together with a questionnaire asking about the 1) relative importance, 2) level of comprehension of each item and their instructions and 3) feasibility of the whole scale for use in clinical practice. A focus group meeting using the Technique for Research of Information by Animation of a Group of Experts method (TRIAGE method) was held to identify potential gaps, suggest additional items and perform content validation. After the meeting, the final version was produced. The final version was used to assess coordination in five individuals with chronic stroke.

Results: The final version of the Comprehensive Coordination Scale (CCS) is composed of 6 items: finger-to-nose test, arm-trunk gain test, lower extremity motor coordination test and interlimb coordination tests for the upper limbs and for all four limbs. Constructs include spatial and temporal variables totaling 63 points, with higher scores indicating better performance. The final form of the CCS is ready to be used with patients with neurological conditions. The measurement properties of the new scale must be assessed.

Conclusions: A new tool for assessing movement quality and performance was developed. The content validity and applicability of the scale was tested and the standards for application were developed. CCS is an important, understandable and feasible tool for clinical practice.

34. What is the Biomedical Research and Informatics Living Lab for Innovative Advances of New Technologies (BRILLIANT) in Mobility?

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Rational: Many individuals with acquired brain injury (ABI) across the lifespan post rehabilitation experience limited mobility preventing them from participating and returning to meaningful activities. The BRILLIANT program has been established to foster evidenced-based research to improve rehabilitation for individuals with ABI.

Objectives: To (1) provide a synopsis of the BRILLIANT objectives and research plan and (2) present the biomedical equipment and informatics platforms that will support the program.

Methodology: BRILLIANT Theme 1 will aggregate data across technologies (biomedical and informatics) to evaluate the complex interplay between body structure, activity, participation, and environmental factors that explain variability in mobility. A BRILLIANT database will be established to support comparative effectiveness research and predictive analytics to identify personalized mobility interventions. Theme 2 will develop cost-efficient community mobility interventions that optimize outcomes for mobility subgroups of patients with ABI. This will allow us to provide decision support to customize mobility training.

Anticipated results: The anticipated outcomes of BRILLIANT include: (1) identifying limiting or enhancing mobility factors in real-world community environments and understanding their complex interplay among individuals with ABI of all ages, and (2) customize community environment mobility training by identifying, on a continuous basis, the specific rehabilitation strategies and interventions that patient subgroups benefit from most. A knowledge mobilization network will be created to accelerate application of findings into care.

Conclusion: There is currently no comprehensive measure to jointly evaluate the myriad of intrinsic and extrinsic factors that influence mobility for individuals with ABI. This will be the first time this combination of technologies will be used to generate and validate mobility data that combines brain imaging, biomedical, patient reported and clinical measures.

35. A comparison of muscle activation and joint angles during gait between patients with Ehlers Danlos syndrome and healthy adults

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Objectives: Patients with Ehlers-Danlos syndrome (EDS) have diminished strength and proprioception compared to healthy participants. It is not clear how these impairments affect muscle function during gait. The primary objective was to compare muscle activation and joint angles during gait between participants with Ehlers-Danlos syndrome (EDS) and healthy adults.

Methods: Participants diagnosed with EDS (n=14, 12 women; mean age=42 y, 2 classical type, 12 hypermobility type) and healthy adults (n=14, 12 women; mean age=50 y) were recruited. Participants ambulated over ground at self-selected speeds for five trials. Muscle activation of ten lower extremity muscles were measured with surface electromyography (EMG). Three-dimensional lower extremity joint angles and gait speed were measured using an optical motion capture system and force plates. Principal component analysis identified important characteristics (principal components) from EMG and angle waveforms. Participant waveforms were scored against these characteristics to produce principal component scores. Multilevel models examined the relationships between principal component scores and groups, after accounting for gait speed. Independent t-tests compared gait speed between groups.

Results: The EDS group (mean=1.09 m/s) had significantly slower gait speeds (p=0.01) than the healthy group (mean=1.32 m/s). The EDS group was associated with prolonged gluteus medius activation (b=-32.78), higher rectus femoris (b=28.34) and tensor fascia latae (b=-11.06) activation, delayed vastus lateralis (b=16.69) and vastus medialis activation (b=11.33), and lower medial gastrocnemius activation (b=-27.18). There were no significant associations between group and joint angles, and thus joint angles were similar between groups after accounting for gait speed.

Conclusions: There are differences in muscle activation in patients with EDS, although joint angles were similar between patients with EDS and healthy adults. Muscle weakness, impaired balance, and impaired proprioception might account for the differences in muscle activation during gait. Functional strengthening programs should target these motor dysfunctions.

36. The effect of fixation stability on balance & posture in vision impairment

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Introduction: Vision is second only to the vestibular system in terms of its contribution to balance. It is well known that individuals with a vision impairment often have diminished balance abilities. Central vision loss, such as that in Age-related Macular Degeneration, forces individuals to rely more on their remaining peripheral vision. This can result in lower visual acuity and less stable fixation. The purpose of this study was to determine if reduced balance and postural stability in vision impairment is related to unstable fixation.

Method: Participants diagnosed with a vision impairment were recruited from the Database of Retinal Images. Fixation stability was measured using the Optos optical coherence tomographer/scanning laser ophthalmoscope (OCT/SLO). Balance was measured using the Timed Up-and-Go (TUG), the Dyamic Gait Index (DGI) and the Activities-specific Balance Confiendence Scale. Postural control was measured with the Nintendo Wii Balance Board.

Results: Based on fixation stability, participants were grouped into those with stable fixation (N=16) and those with unstable fixation (N=5). The stable group had significantly better balance performance according to the TUG ($U = 14.00$, $p = 0.035$) and DGI ($U = 13.00$, $p = 0.027$) compared to the unstable group. The stable group were also more confident in their balance abilities ($U = 32.00$, $p = 0.672$) and reported fewer falls in the last year ($U = 24.50$, $p = 0.328$) however, these results were not significant.

Discussion: To date, study results show that fixation stability is a visual component that affects balance. Those with greater fixation stability are able to move faster and more safely. Further analyses using data collected from the Wii Balance Board will examine postural stability and identify the contribution of vision to postural control.

37. The link between cognitive impairment & drusen characteristics in age-related macular degeneration

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Introduction: Age-Related Macular Degeneration (AMD) is a common cause of severe vision impairment in populations over 50 years old. It is characterized by drusen; the accumulation of waste between the retinal pigment epithelium and Bruch's membrane. Drusen have been identified in the eyes of Alzheimer's patients, post-mortem. Further, beta-amyloid, best known as a pathological component of the senile plaques in Alzheimer's disease, has been identified as a component of drusen in AMD. The current study uses optical coherence tomography (OCT) and a cognitive assessment to investigate the potential use of drusen as a biomarker of cognitive impairment.

Method: To date, 10 participants (nine women) aged 74 to 95 years with a diagnosis of AMD and/or drusen were tested. The Optos® OCT/SLO imaging system was used to take cross-sectional images of the retina. The images were then manually graded by two trained graders to determine the number of drusen present along the retina. The Montreal Cognitive Assessment (MoCA) was used to assess overall cognitive status.

Results: Of the 10 participants, seven scored positive for MCI (Mpass = 27.33, SDpass = 0.58; Mfail = 21.86, SDfail = 2.55). Preliminary analyses have demonstrated that individuals who pass the MoCA seem to have fewer drusen present (Mdn = 35) compared to those who score positive for cognitive impairment (Mdn = 63). However, this difference was not significant; U = 5, p = 0.27.

Discussion: The results agree with previous literature demonstrating an increased prevalence of MCI in individuals with AMD. The larger average number of drusen found in individuals scoring positive for MCI points to a difference in retinal abnormalities based on cognitive status. Beyond sample size, the insignificance of the difference between groups at this stage can be explained by the number of individuals who failed the MoCA who have wet AMD (n = 5). The wet AMD makes grading of drusen on OCT scans more difficult due to scarring and warping of the retina. This could result in an under-representation of the number of drusen. Data collection is still underway, and an accurate depiction is expected with a larger sample size.

38. Empowering youth with a rare disease: Lessons learnt from a PhotoVoice project

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Background/Objectives: Arthrogryposis Multiplex Congenita (AMC) affects in 1 in 3000 live births, and is defined as congenital joint contractures in two or more different body areas. Decreased range of motion and involvement of other systems (i.e., central nervous system), leading to activity limitations and participation restrictions. Indeed, youth with AMC and their caregivers identified a need for psychosocial support during focus groups. As AMC is rare, youth with AMC and their families have limited opportunities for exchange and support. PhotoVoice is a method used to give people the opportunity to represent themselves and tell their story, yet this had not been used in AMC until now.

To address this need, a project using PhotoVoice and online groups for youth with AMC was conducted in June-August 2018. Four groups were led by an occupational therapist and social worker, and youth were asked to take pictures of what makes life easy and hard. Participants were asked to use the 'F-words' created by Dr. Rosenbaum and Dr. Gorter for child neurodisability to identify what areas their pictures related to. Although eight youth were recruited from three different countries, engagement diminished over the four groups. To promote engagement, we propose involving a young adult with AMC to become a research partner for this project. The objective is to pilot a PhotoVoice project using a research partner.

Description: The findings of the completed 2018 PhotoVoice project and the areas for development will be presented in the Demonstration Poster. A description of the participatory action research (PAR) methodology to select the theme for the PhotoVoice project, the use of the 'F-words' to classify the areas of childhood disability captured by the participants, the role of the research partner to promote engagement, and evaluation of the project's impact using the Public and Patient Engagement Evaluation Tool.

Significance: Using PhotoVoice via online groups will provide the opportunity for psychosocial exchange and support among youth with a rare condition across borders. In addition, the inclusion of a research partner using PAR strengthens the relevance and the impact of research to empower youth. Combining PhotoVoice, a PAR methodology using a research partner on an online platform is innovative and transcends barriers of traditional methods used in childhood-onset disability research. Findings of this project will guide clinical practice and enhance clinical research in AMC.