Final Program
2021 Virtual Event
International Neuropsychological Society
June 30 - July 3, 2021

6th Pacific Rim Conference
Putting our heads together to change lives

A joint meeting of the International Neuropsychological Society (INS), the Australasian Society for the Study of Brain Impairment (ASSBI), and the Australian Psychological Society's College of Clinical Neuropsychologists (CCN).

WEDNESDAY 30th JUNE, 2021

9.00 – 4.00 Workshops		
9.00-12.00 Workshop 1 **Neil Pliskin** *The shocking Truth About Electrical Injuries*	**9.00-12.00 Workshop 2** **Kylie Radford and Terry Donovan** *Wisdom, memories and connections: Towards a more holistic approach to neuropsychology with Aboriginal and Torres Strait Islander peoples*	**9.00-12.00 Workshop 3** **Vicki Anderson, Michael Takagi, Vanessa Rausa, Katie Davies and Gavin Davis** *Accelerating recovery from child concussion requires a collaborative multidisciplinary approach*
10.30-10.45 Morning Tea Break		
12.00-1.00 Lunch break – Networking opportunity		
1.00-4.00 Workshop 4 **Rene Stolwyk and Wendy Kelso** *Zooming into the details: a practical guide to conducting assessments of cognition, language and mood using telehealth*	**1.00-4.00 Workshop 5** **Sarah MacPherson** *Executive function assessments as cognitive markers of pathological aging: Evidence from healthy aging and dementia*	**1.00-4.00 Workshop 6** **Emma Power** *Implementation of face to face and online communication partner training programs in ABI: A step by step implementation workshop*
2.30-2.45 Afternoon Tea Break		
4.00 Workshops CLOSE		
4.15 – 5.00 Brain Impairment editorial board meeting/ASSBI committee meeting		
6.00-8.00 Welcome Reception **7.00-7.10 Silvia Pfeiffer from COVIU**		

THURSDAY 1st JULY, 2021

8.30 – 10.30 **PLENARY 1**
8.30 – 8.45 8.30 Acknowledgement of Country
8.45 Opening remarks from conference co-convenors
9.00 Welcome from Presidents and Chairs of INS, ASSBI and CCN
9.15 Launch of the online training platform for the Risk of Bias in N-of-1 Trials (RoBINT) Scale: a resource for the critical appraisal of single-case research designs – Robyn Tate

9.30 – 10.30 **Neil Pliskin – International Keynote Speaker (60 mins):** *What is the true value of neuropsychological services and how will they need to change to stay relevant?*
10.30 – 11.00 Morning Tea break – opportunity to see exhibitors

11.00 – 12.30 **CONCURRENT SESSIONS 1 – 4 (90 mins)**

Session 1: **Invited symposium** Epilepsy in Children: Cognition, Behaviour and Language	**Session 2:** Psychological support - ABI	**Session 3:** Neuropsychology, health and function	**Session 4:** COVID-19
Suncica Lah: *Accelerated long-term forgetting: A hidden memory disturbance in children with epilepsy* **Amanda Wood:** *Exposure to epilepsy medications in pregnancy and their impact on child cognition and behaviour* **Natalie Phillips:** *Longitudinal changes in emotional and psychosocial functioning and impact of the family environment following resective surgery in children with drug-resistant epilepsy* **Linda Gonzalez:** *An integrative model to support clinical decision making in paediatric epilepsy surgery*	**Josephine Paasila**: *Do Reasons for Living and Other Protective Factors Buffer against Psychological Distress and Suicide Ideation Following Severe TBI? A Cross-Sectional Study* **Jaycie Bohan:** *Psychological wellbeing and caregiving strain in significant others of individuals with ABI participating in a transitional rehabilitation service: Outcomes in the first year post hospital discharge* **Jacinta Douglas:** *Evaluation of a Multi-component Community Connection program (M-ComConnect) for people with severe traumatic brain injury: Preliminary results* **Nick Sathananthan:** *A Single-Case Experimental Evaluation of a New Group-Based Intervention to Enhance Adjustment to Life with Acquired Brain Injury: VaLiANT (Valued Living After Neurological Trauma)* **Hannah Miller:** *Development and validation of the Valued Living Questionnaire – Comprehension Support Version (VLQ-CS)*	**Sam Humphrey:** *Performance on Cognitive Screening Following Endovascular Clot Retrieval and Intravenous Thrombolysis in Acute Ischaemic Stroke* **James Gooden:** *Predictors of Cognitive Functioning in Presentations to a Community Based Specialist Addiction Neuropsychology Service* **Datablitz:** **Thomas Borchard**: *The Brief-Executive-function Assessment Tool: A new cognitive impairment screening tool for alcohol and other drug services* **Mai Nguyen:** *Psychological and Cognitive Barriers to Diabetes-Related Foot Complication Treatment: Clinicians' Perspectives* **Dion Braganza:** *Interictal Cognitive Deficits in Migraine Sufferers: A Meta-Analysis* **45 min How to Session** **Simone Mangelsdorf-Collett** *Functional Neurological Disorders: strategies for assessment and feedback*	**45 min How to Session** **Clare Ramsden and Tracy Vannorsdall:** The Neuropsychology of COVID-19: International perspectives and implications for clinical practice **Grace Wei:** *Behavioural and psychological effects of the COVID-19 pandemic on people living with dementia and their carers: an international study* **Amelia Ceslis:** *Neuropsychology adaptations during COVID-19: A UQ Neuropsychology Research Clinic method* **Susan Mahon:** *Administering the WAIS-IV using a novel home-based telehealth videoconferencing approach*

	Datablitz: **Alexandra Armstrong:** *Patterns of valued living and relationships with psychological and occupational outcomes in community-dwelling acquired brain injury survivors* **Adam McKay:** *The Perspective of Nurses in Managing Patients with Agitation After Traumatic Brain Injury* agitation nurses perspective **Danielle Sansonetti:** *Self-awareness in adults with acquired brain injury: A systematic review of theory to inform rehabilitation*		

12.30 – 1.30 Lunch – Networking Session

1.30 – 3.00 CONCURRENT SESSIONS 5 – 8 (90 mins)

Session 5: “Self” after Traumatic Brain Injury	**Session 6:** Paediatrics	**Session 7:** Dementia	**Session 8:** How to Sessions
Julia Schmidt: Overview of symposium followed by: *Perspective of the carer and person with brain injury: Changes to everyday life affecting one's self.* *Including videos of person and carer with brain injury* **Joan Toglia:** *Dynamic Comprehensive Model of Awareness (DCMA), awareness interventions using a metacognitive framework (general here)* **Yael Goverover:** *The Impact of Personal Protective Factors on Resiliency after Traumatic Brain Injury* **Mark Sherer:** *Social communication skills with impaired self-awareness* **Tamara Ownsworth:** *Models of self-identity and intervention approaches* **Danielle Sansonetti:** *Integrating interventions and assessments into service delivery: challenges and*	**Elisha Josev:** *White matter microstructure in paediatric chronic fatigue syndrome and its relationship with cognition and fatigue* **Kassandra Hewitt:** *Neuropsychological Profiles of Western Australian Children with Cerebral Palsy* **Louise Crowe:** *The long-term social skill outcomes of young children with traumatic brain injury: What predicts outcome?* **Taylor Jenkin:** *Family interventions in the rehabilitation of paediatric acquired brain injury: A scoping review* **Jesse Shapiro:** *No difference in resting state network activity between children with normal and delayed recovery from concussion* **Datablitz:** **Jesse Shapiro:** *No multivariate difference in cognitive recovery*	**Emily Rosenich:** *Differential associations of modifiable and non-modifiable dementia risk factors with memory decline and hippocampal volume loss in Aβ- and Aβ+ cognitively normal older adults* **Muireann Irish:** *Clinical and Neural Correlates of Anhedonia in Frontotemporal Dementia* **Stephanie Wong:** *Emotional apathy in dementia: exploring the impact of altered reward processing* **Dimitrios Saredakis:** *A clinical trial to reduce apathy in residential aged care using virtual reality* **Fiona Kumfor:** *Understanding the overlap between autism spectrum disorder and frontotemporal dementia: Cognitive similarities and differences* **Datablitz:**	**30 min How to Sessions** **Nicci Grace, Caroline Fisher, Eddie Tsang and Mary Castellani:** *Adult ADHD: Assessment, Diagnosis and Intervention* **Nicci Grace and Caroline Fisher:** *ASD in Adults: The diagnostic process* **Melissa Brunner, Nicholas Behn and Louisa Selvadurai:** *How (and Why) to Present Your Research on Social Media*

considerations (acknowledge evidence, practice standard, and current practice) **Jennifer Fleming facilitating the Conclusion and panel discussion:** *future research priorities and opportunities* Learning Objectives for this symposium: • To enhance attendees' understanding of theoretical models relevant to self-awareness and identity after brain injury; • To outline evidence-based assessment approaches and interventions for addressing the self after brain injury; • To provide an interactive forum to discuss the complexities of research on self after brain injury and identify future research priorities and opportunities.	*between children with normal and delayed recovery from concussion: a longitudinal study* **Sarah Knight:** *The development of a theory informed, behaviour change intervention to improve goal setting for children with paediatric acquired brain injury and their families during rehabilitation* paeds change **Bridgette Semple:** *Environment enrichment versus social grouping has differential effects on long-term behavioral deficits in a mouse model of pediatric traumatic brain injury*	**Jessica Hazleton:** *Getting to the heart of it: A multi-centre international investigation of cardiac interoception in neurodegenerative syndromes* **Libby Callaway:** *Validating social impact domains with the Huntington's Disease community: a qualitative study)* **Amie Foran:** *The QuickSort: a brief, new cognitive screen for older adults*	

3.00 – 4.00 **Poster Sessions 1 & 2, Datablitz Poster Session 7 and Break**

4.00 – 5.30 **PLENARY 2**

4.00 – 4.45 **Sarah Jayne Blakemore – International Keynote Speaker (1 hour):** Social risk taking in adolescence

PLENARY 2A

4.50 – 5:05 **Sarah Jayne Blakemore LIVE Q&A**

5:00 – 5.45 INS Presidential Address: **Professor Skye McDonald** *Getting emotional*

FRIDAY 2nd JULY, 2021

7.45 – 8.45 - Mini Masterclass 1 **Fiona Fisher & James Howe** *Understanding the Victorian Voluntary Assisted Dying Act 2017: Considerations and Conundrums*	**7.45 – 8.45 Mini Masterclass 2** **Natasha Lannin & Sophie O'Keefe** *State of the Evidence Masterclass on Effective Vocational Rehabilitation after Brain Impairment*	**7.45 – 8.45 - Mini Masterclass 3** **Katie Douglas and Richard Porter** *Interventions for Cognitive Impairment in Mood Disorders*

8.55 – 10.30 **PLENARY 3** brought to you by The Summer Foundation
8.55 – 9.00 **Q&A with Kate D'Cruz from the Summer Foundation**

9.00 – 9.45 **ASSBI Presidential Address: Olivier Piguet (45 min)** *"Dazed and Confused!" Brain, context, and social disconnect*

9.45 – 10.30 **Kylie Radford: National Keynote Speaker (45 mins):** *"Healthy ageing is your mind staying young": Longevity, brain health and dementia in Indigenous peoples*

10.30 – 11.00 Morning tea break – opportunity to visit exhibitors

11.00 – 12.30 **CONCURRENT SESSIONS 9 – 12 (90 mins)**

Session 9 & 9A: ABI – accommodation & work issues	**Session 10 & 10A:** Assessment issues	**Session 11:** Memory interventions	**Session 12:**
Di Winkler: *No choices and nothing to do: Changing policy, practice and systems through programmatic research to prevent young people with acquired brain injury from being forced to live in aged care* **Session 9A** **Mandy Nielsen:** *Implementing a transition-specific service model: Community re-integration outcomes of the ABI Transitional Rehabilitation Service (ABITRS) Pilot Project* **Stacey Oliver:** *Being a pioneer: A qualitative study of the experience of moving into SDA accommodation from the perspective of adults with neurological disability* **Lee Cubis**: *Hospital to Home: Evaluating the Discharge Planning Process for People with Acquired Disability and Complex Support Needs* **Datablitz:** **Lee Cubis:** *Components of effective hospital*	**Dana Wong:** *Identifying a core set of outcomes of neuropsychologicaOl assessment for use in research and clinical practice* **Leanne Mathews:** *Using Neuropsychological Assessment to Inform Rehabilitation in a Prison Youth Unit: A New Zealand Perspective* **Molly Schafer & Robin Murray:** *Perspectives from the Aboriginal Assessment Project: our experience conducting neuropsychological assessments of Aboriginal people living in rural NSW who had been charged with an offence* **Mathew Staios:** *The Weschler Adult Intelligence Scale, Fourth-Edition, Greek Adaptation (WAIS-IV GR): Normative Data for Elderly Greek Australians* **Session 10A** **Matt Thomas:** *Investigating the Test of Premorbid Functioning (TOPF) in predicting Wechsler Abbreviated*	**45 min How to Session** **Liz Mullaly and Liz Rand:** *How to run an online memory group for individuals with cognitive decline* **Kerryn Pike:** *OPTIMiSE: A feasible, acceptable, and efficacious online memory strategy training program for older adults* **Duy Dao:** *Improving Memory Self-Efficacy, Control Beliefs and a Sense of Community in Older Adults via Online Learning* **Nicolette Kamberis:** *Alignment between subjective memory complaints, objective memory performance, and goal attainment as outcome measures following memory rehabilitation post-stroke*	**45 min How to Session** **Robyn Tate and Michael Perdices:** *How to plan and implement a single-case experiment: a practical, 10-step guide* **Thomas Gates:** *What are the predictors of TOMM failure in clinical TBI populations? A retrospective analysis* **Datablitz:** **Kimberley Wallis:** *Assessing Social Cognition in Acquired Brain Injury: Results from a Scoping Review* **Kimberley Wallis:** *Development of a Clinical Assessment Tool for Social Cognition in Acquired Brain Injury: A Validation Study* **Sarah Chuah:** *Are individuals ready for telehealth after a moderate to severe traumatic brain injury? A cross sectional study* **Hana McDonald:** *The diagnostic validity of neuropsychological methods for the pre-surgical lateralization of*

discharge for people with acquired disability and complex needs: A Scoping Review **Kerrin Watter:** *Moving from 'Gaps' to 'Networks': Service provider experiences and views of ABI vocational rehabilitation in Queensland* **Bleydy Dimech-Betancourt:** *User experience and preliminary evaluation of a simulator-based driver rehabilitation programme for people with acquired brain injury* **Laura De Lacy:** *Shopping routines: a qualitative study of adults living with a traumatic brain injury* **Lauren Libeson:** *Factors Associated with Employment Stability Following Traumatic Brain Injury of Those Who Have Received Comprehensive Vocational Rehabilitation* **Megan Topping:** *Factors that Influence the Quality of Paid Support for Adults with Acquired Neurological Disability: Scoping Review and In-Depth Interviews*	*Scale of Intelligence – Second edition (WASI-II) scores in an Australian sample* **Datablitz** **Matt Thomas:** *The factor structure of the Hospital Anxiety and Depression Scale (HADS) in Australian adults with traumatic brain injury and a general community sample* **Matt Thomas:** *The factor structure of the Rivermead Post Concussion Symptoms Questionnaire (RPQ) in Australian adults with traumatic brain injury* **Michelle McIntyre:** *The Guddi Way Screen: Developing a culturally sensitive cognitive screen for Aboriginal and/or Torres Strait Islander Peoples*		*seizure foci in temporal lobe epilepsy: A systematic review and meta-analysis* **Suzane Vassallo:** *Clinical indicators of visual deficits following chronic severe traumatic brain injury*

12.30 – 1.30 Networking Lunch

12.30-1.30
A Mini Workshop for Practicing Students and Early Career Clinicians Transitioning into Telehealth
Presented by Dr Caroline Baker and Dr Jodie Chapman
Chair: Jonathan Reyes

1.30 to 3.00 **CONCURRENT SESSIONS 13 – 16 (90 mins)**

Session 13: How to Session & Debate	**Session 14:** Paediatrics	**Session 15:**	**Session 16:**
30 min How to Session **Jamie Berry:** *Goal setting for neuropsychological intervention using modified goal attainment scaling* **GAS Debate:** **Moderator: Professor Barbara Wilson**	**Rebecca Sutherland:** *'I really liked seeing the child in his natural environment': Clinician perceptions of using standardised language assessments via telehealth* **Antoinette Hodge:** *Telehealth educational assessments in rural and remote schools –*	**Leah Chadwick:** *Cognitive outcomes in children with mild traumatic brain injury: Subtest performance on the National Institutes of Health Toolbox Cognition Battery* **Datablitz** **Che Phillips:** *Recovery after Severe Traumatic Brain Injury: Return to Life and Work as a Physiotherapist*	**45 min How to Sessions** **Johanne Rauwenhoff and Pascalle Bosboom:** *Acceptance and Commitment Therapy for people with acquired brain injury* **Genevieve McMahon:**

Speakers For GAS: James Malec (USA) and Shai Betteridge (UK) **Speakers Against GAS:** Derick Wade (UK) and William Levack (NZ)	*perspectives of support teachers* **Kristina Haebich:** *Telehealth-delivered neurodevelopmental Assessments in children and adolescents (Tele-Assess): preliminary neuropsychological assessment results* **Alexia Pavlis:** *Effective communication in neuropsychological assessment reports: teachers' perspectives on the presentation of assessment results* **Hayley Pickering:** *The Contribution of Anxiety to Cognitive and Educational Outcomes in Children with Additional Health and Developmental Needs* **Datablitz:** **Hayley Pickering:** *Visuospatial Memory and Vocabulary Relations in School-Aged Children: A Systematic Review and Meta-Analysis* **Bethany Menzies:** *Effects of paediatric sleep disordered breathing on cognition: a systematic review with meta-analysis* **Cecilia Law:** *Factor Structure of the Parent and Child Memory Questionnaires: Exploratory Factor Analysis with Typically Developing Children*	**Amy Ford:** *A review of the insider experience of close personal relationships following stroke* **Rachael Rietdijk:** *interact-ABI-lity: A new online resource for training carers and others to communicate with people with acquired brain injury* **Alena Murray:** *Vocational rehabilitation following acquired brain injury: a systematic scoping review* **Penni Burfein:** *Return to work for stroke survivors with aphasia: Preliminary findings of a scoping review* **Vivian Leung:** *Efficacy of memory training for multiple sclerosis: A multiple-baseline single-case study* **Shahanur Hossain:** *Adaptation of the Brain Injury Questionnaire of Sexuality into Bangla and initial findings from a sample of Bangladeshi traumatic brain injury patients* **Sharon Truter:** *Neuropsychological Test Performance in a Non-clinical Multilingual Group of South African Children with Advantaged and Disadvantaged Education* **Mairi Crombie:** *Examination of the Validity of the 'Papadum Test': An Alternative to the Clock Drawing Test for people with Low Levels of Education/Literacy* **Tamara Keiller:** *Executive Functioning Assessment with Aboriginal and Torres Strait Islander Australians* **Farzaneh Mashhadi:** *The Impact of Childhood Adversity and Lifespan Trauma on Decision-Making and Theory of Mind Abilities in Homeless and Precariously Housed Adults* **Katherine Russell:** *The Relationship Between Length of Hospitalization, Mood, and Cognition in Recovered COVID-19 Patients* **Olaf Chmura:** *Influence of genetic variability on the clinical course of Parkinson's*	*How to incorporate interactional cycles into behaviour assessment and management after acquired brain injury: beyond ABC*

		disease and efficacy of levodopa treatment **Jan Koper:** *Vitamin D Receptor Mutations Influence on Course of Parkinson's Disease in Patients Treated With Levodopa* **Joanna Ho:** *ECT DVD: Let's Talk About It!*	

3.00 – 4.00 **Poster Sessions 3 & 4 and Datablitz Poster Session 8 & Break**

4.00 – 5.30 **PLENARY 4**

4.00 – 5:00 **Birch Lecture – Sarah MacPherson (International Keynote Speaker 2) (60 mins)**
Inter-individual variability in frontal lobe functions: Studying executive functions and social cognition in brain injured and healthy brains

5.00 – 5.45 **Emma Power – National Keynote Speaker (45 mins)**
"I wouldn't want to open a can of worms": Sexuality and Intimacy in acquired brain Injury

SATURDAY 3rd JULY, 2021

9:00 – 10.30 PLENARY 5
9:00 – 9.45 Rene Stolwyk – National Keynote Speaker (45 min)
PLENARY 5A
10.00 – 10.30 CCN Presidential Address: Amy Scholes (45 min)

10.30 – 11.00 Morning tea break – opportunity to visit Exhibitor

11.00 – 12.30 CONCURRENT SESSIONS 17 – 20 (90 mins)

Session 17: **Chair: Kate Gould** Invited student symposium	**Session 18:** Speech and communication	**Session 19:** TBI - characterisation	**Session 20:** ABI treatments
"From recommendations to rehabilitation" **Panelists:** Kate Gould, Joan Tierney, Katie Davies and AJA (person with lived experience)	**Session 18** **Maya Menahemi Falkov:** *What do we know about the maintenance of therapeutic effects in people with chronic aphasia? Implications for clinical practice* **John Pierce:** *Comparison of Constraint Induced Aphasia Therapy and Multi-Modality Aphasia Therapy at a Low-Moderate Intensity – A Substudy Randomised Controlled Trial* **Joanne Steel:** *How do speech pathologists assess and treat spoken discourse after TBI? An international survey of clinical practice* **Joanna Shorland:** *Older adult admissions to subacute rehabilitation following traumatic brain injury: A comparison of characteristics, speech pathology input and outcome indices across the adult age-span* **Petrea Cornwell:** *"Mum you have to realise it is NOT dad, not the way he used to be": Exploring the theoretical constructs of social communication impairment after right hemisphere damage (RHD)* **Datablitz** **Gail Robinson:** *Development and validation of the Brief*	**Halle Quang:** *Do more for more: Reward processing underlying apathy following moderate-to-severe traumatic brain injury* **Courtney Spiteri:** *Comparing the Westmead Post Traumatic Amnesia Scale, Galveston Orientation and Amnesia Test and Confusion Assessment Protocol as Measures of Acute Recovery Following Traumatic Brain Injury* **Abbie Taing:** *Temporal Lobe Activation Predicts Episodic Memory Following Traumatic Brain Injury* **Lucy Oehr:** *Applying a novel diffusion weighted imaging approach to the study of white matter tract microstructure and cognition following mild traumatic brain injury* **Amelia Hicks:** *Does ongoing cognitive decline occur decades after a moderate to severe traumatic brain injury? A prospective controlled study* **Datablitz** **Amelia Hicks:** *Amyloid-β and tau imaging in chronic traumatic brain injury: A case-control study* **Bojana Sarkic:** *Frequency of peripheral vestibular pathology following traumatic brain injury: a*	**Glenn Kelly:** *Behaviour Support Interventions for Sexualised Behaviours: A Large Case Series* **Elinor Fraser:** *Understanding the multidimensional nature of sexuality after traumatic brain injury* **Jao Carminati:** *Cyberscams and Acquired Brain Injury: A Qualitative Exploration of the Lived Experience of Survivors and Close Others* **Anneli Cassel:** *Can we treat social cognitive deficits after acquired brain injury? Feasibility findings from the SIFT IT pilot RCT* **Laura Connolly:** *Home-Based Light Therapy for Fatigue Following Acquired Brain Injury: A Pilot Randomized Controlled Trial* **Diane Whiting:** *Building capacity among psychologists in treating clients with mental health needs after traumatic brain injury via video consulting: Evaluation of a pilot training workshop*

	Executive Language Screen (BELS) for frontal aphasia **Melissa Brunner:** *Are there any social media skills training resources available for people with a brain injury? Results of a scoping review* **Katherine Cameron:** *Getting on with the job: Developing a better understanding of cognitive-communication impairments and work*	*systematic review of literature* **Regina Schultz:** *Neuropsychological recovery in the first 12 months following severe traumatic brain injury: a longitudinal study with serial assessments*	

12.30 – 1.00 Lunch break

1.00 – 2.05 **CONCURRENT SESSIONS 21 - 24 (65 mins)**

Session 21: Paediatrics	**Session 22:**	**Session 23:** Cognitive rehabilitation	**Session 24:** Community Living and Co-design in Acquired Brain Injury
45 min How to Session **Molly Colvin:** How to account for the Impact of COVID-19 in the Assessment of Learning Disabilities **Datablitz** **Mark Pertini:** *Childhood dementia in Australia: Population data and patterns of cognitive and neurobehavioural symptoms associated with the most common form of childhood dementia* **Amanda Osborn:** *Cognitive, behavioural and psychological outcomes in individuals with sagittal synostosis: a meta-analysis examining the impact of surgical status* **Anita Dharam:** *Cognitive comorbidities in juvenile absence epilepsy*	**Katerina Pappa:** *Working memory training: Taking a step back to retool and create a bridge between clinical and neuroimaging research methods* **Sharon Truter:** *Investigation into Reliable Cut-off Scores on Effort Tests for Educationally Disadvantaged South African Brain Injury Litigants* **Lynne Turner-Stokes:** *Identification of patients in prolonged disorders of consciousness (PDOC) using the UK Functional Assessment Measure (UKFIM+FAM): A predictive sensitivity analysis* **Nikki-Anne Wilson**: *Send in the Clowns (to the Funeral): Incongruent Scene Construction in Frontotemporal Dementia*	**Talia Nardo:** *Cognitive Rehabilitation for Substance Use Disorder: Results from the ACE Stepped-Wedge Cluster Randomised Trial* **Coco Bernard:** *Trial of an Inpatient Multi-disciplinary Led Cognitive Rehabilitation Group: Learnings & Challenges* **Diana Ramirez:** *The experience and acceptability of smartphone reminder app training for people with acquired brain injury: a mixed methods study* **Datablitz** **Nga Yan Tse:** *Memory Rehabilitation in a Group-based Format: What can be learned from participant feedback?* **Marina Cavuoto:** *Exploring the impact of everyday memory difficulties in transient epileptic amnesia: A qualitative study* **Nicole Sugden:** *Is it important? Memory aid usage mediates relationships between task importance and prospective memory performance*	**Kate D'Cruz:** *"I have always wanted to do work like this but felt it was out of reach": Hopes and expectations of participating in a co-design storytelling project* **Libby Callaway:** *Using or providing allied health services within the National Disability Insurance Scheme: Co-designed tools and resources for people with disability, their families and allied health professionals working with them* Concussion **Jonathan Reyes:** *Observable signs of concussion and cognitive screening performance in community sports* **Yalleen Flahive:** *Neuropsychiatric Profiles of Young Professional Male Athlete* **Datablitz: 5min** **Jennifer Makovec Knight:** *Reliability of Self-report for Injury Surveillance in Junior Australian Football*

2.05 – 3.00 **Poster Sessions 5 and 6 and Datablitz Poster Session 9 and break**

3.00 – 4.00 **CONCURRENT SESSIONS 24 - 28 (60 mins)**

Session 25: How to Sessions	**Session 26:** **Chair:**	**Session 27:** **Chair: Jennie Ponsford** Positive Behaviour Support Symposium	**Session 28:** **How to Sessions**
30 min How to Session **Harvey Jones** *Neuropsychological Treatment of Persistent Post-Concussion Symptoms* **SESSION 25a** **30 min How to Session** **Josh Faulkner** *Innovative Clinical Tools to Support the Management of Concussion from Recognition to Rehabilitation*	**INS award winners** INS Early Career Award **Muireann Irish** *"Fragments of the Future" – How neurodegenerative disorders shaped the landscape of memory research* The Mid-Career Research Award **Tamara Ownsworth** *Know thyself: What does it mean to be self-aware after brain injury?*	**Jennie Ponsford:** *A Positive Behaviour Support Intervention for Adults with Acquired Brain Injury and Challenging Behaviour: A Waitlist Controlled trial* **Kate Gould:** *Goal Attainment Scaling used to achieve of 92% of individualised goals during Positive Behaviour Support intervention in adults with challenging behaviours after severe acquired brain injury* **Kristian Holth:** *"I've Never Been Positive … I Am Now". Participant Perspectives of a Positive Behaviour Support Intervention (PBS+PLUS) for Community Living Individuals with ABI and their Close Others* **Penelope Analytis:** *Clinical perspectives on delivering a Positive Behaviour Support intervention (PBS+PLUS) for challenging behaviours following acquired brain injury*	**30 min How to Sessions** **Jane Bradshaw:** *Be Pain Smart Clinic – A new model care for chronic pain management of people with brain injury* **Therese Alting:** *How to learn from Huntington's disease: a story from despair to hope*

4.00 – 5.00 AWARDS AND CONFERENCE CLOSE
Olivier Piguet, Skye McDonald and Amy Scholes
Thanks to Convenor, Committees and Sponsors
Awards

ASSBI Student Awards

- Kevin Walsh Award (AU$750)
- Luria Award (AU$750)
- Travel Award (AU$750)

INS Awards

- INS Student Liaison Committee Student Research Awards
    - Post-doc fellow research Award (US$500)
    - Memory disorders research Award (US$500)
    - Graduate student research Award (US$500)
- Marit Korkman Award
- Mentoring Award
- INS Distinguished Career Award
- INS Early Career Award
- The Mid-Career Research Award
- Lifetime Achievement Award

CCN Student Awards

Poster Presentation 1 – Psychiatric and Other – Thursday afternoon tea

Holly Emery	Impairment of emotion perception and online awareness following alcohol-intoxication may be reduced with the inclusion of context
Caroline Gurvich	The neuropsychological profile of premenstrual mood disorders
Cynthia Honan	Chronic Fatigue Syndrome: An Examination of Latent Profiles and Functional Outcomes
Isabelle Kaiko	Getting stuck daydreaming: The role of cognitive rigidity in anxiety while mind-wandering
Thomas Khan-White	Effect of mindfulness meditation and coping strategies on affect and depression symptomatology among medical students during national lockdown - a prospective, non-randomised controlled trial
Siew Kwaon Lui	An Encounter of a Case of Syndrome of the Trephined in Rehabilitation
Yui Masuda	Deficits of future thinking and autobiographical memory in patients with diffuse axonal injury
Halle Quang	Unfolding cultural variances of apathy and depression: A comparison between the Vietnamese and Australians
Mitsuyo Shibasaki	The Relationship between Individual Differences in the Face-specific N170 Event-related Potentials Component and the Abilities of Face Perception and Facial Expression Recognition
Joanna Tauro	Social cognition in female adults with Anorexia Nervosa: a systematic review
Jason Turner	The relationship between inflammatory biomarkers and social-cognitive functioning in multiple sclerosis
Gabrielle Veloso	The effects of emotional working memory training on trait anxiety
Christopher Wurm	The message isn’t getting across. Brain impairment and other barriers to sustained change in alcohol use disorder
Guillermina Yañez-Tellez	Social Cognition in Adults with Attention Deficit Hyperactivity Disorder (ADHD)

Poster Presentation 2 – Paediatric and Concussion – Thursday afternoon tea

Fumiko Anzaki	Effect of Cognitive Neuropsychological Intervention on Persons with Developmental Stuttering
Shayden Bryce	A systematic review of cognitive enhancing interventions in youth with depression
Dorota Buczylowska	The relationship between executive functions and intelligence according to the CHC theory
Simonne Collins	Development of Brain White Matter and Math Computation Ability in Children Born Very Preterm and Full-Term
Eliane Deschrijver	The double empathy problem of autism through the lens of relational mentalising

Madeline Doucette	Panic attacks and reduced breathing rate? Athletes' endorsement of true and distractor concussion symptoms
Courtney Gilchrist	The structural connectome and internalising and externalising symptoms in individuals born very preterm
Zubin Irani	Establishing a Model of Cognitive Reserve in a Paediatric Cohort
Taylor Jenkin	Understanding experiences of family-centred care for children and adolescents with acquired brain injury and their families
Harvey Jones	Treating post-concussion syndrome: just another functional neurological disorder
Brendan Lam	Demographic and Clinical Characteristics Associated with Increased Direct Healthcare Costs in Youth with Persistent Post-Concussion Symptoms: A Quantile Regression Analysis
Jennifer Makovec Knight	Padded headgear in junior and youth Australian football: player insights from a national survey
Jessica Peters	Action video game training improves text reading accuracy, rate and comprehension in children with dyslexia: A randomized controlled trial
pip pyman	Cognitive and Behavioural Attention in Children with Low-Moderate and Heavy Doses of Prenatal Alcohol Exposure: A meta-analysis and systematic review
Elena Sheldrake	Exploring Mental Health Connections Across the Lifespan in Individuals with Persistent Post-Concussion Symptoms: A Scoping Review
Kate Spill	Reconsidering the maternal "babybrain": Theory of Mind cognition during pregnancy and its association with the infant attachment relationship

Poster Presentation 3 - Clinical Practice Issues and Assessment – Friday afternoon tea

Christine Canty	From Aussie to Aotearoa: A personal account of neuropsychology practice across the ditch.
Jodie Chapman	Rehabilitation services for people recovering from major trauma injury in rural and remote Victoria: Investigating clinician availability and accessibility
Maximiliano Folmer	Sensitivity and Specificity of the Multicultural Neuropsychological Scale (MUNS) in a heterogeneous Argentinian Sample
Manon Hendriks	Does the availability and utility of neuropsychological services in WA meet the needs of people with ABI (stroke and TBI) in WA?
Manon Hendriks	Demographics of clients and their conditions commonly seen in a neuropsychology private practice in Western Australia
Talia Nardo	Reliability and Validity of a Two-Minute Screening Tool to Identify Those at Risk of Cognitive Impairment in Substance Use Treatment
Grahame Simpson	Developing Reference Tables for the Overt Behaviour Scale (n=926): A Psychometric Study
Rebecca Sutherland	Barriers and facilitators of telehealth for speech pathology before and after regular telehealth use
Matt Thomas	The factor structure of the Depression Anxiety and Stress Scales (DASS-21) in Australian adults with traumatic brain injury
Matt Thomas	The factor structure of the Quality of Life Inventory (QOLI) in Australian adults with traumatic brain injury and a general community sample
Matt Thomas	The factor structure and potential utility of the Head Injury Knowledge Scale (HIKS)
Matt Thomas	Investigating the National Adult Reading Test (NART-2) and Wechsler Test of Adult Reading Test (WTAR) in predicting Wechsler Abbreviated Scale of Intelligence – Second edition (WASI-II) scores in an Australian sample
Amanda Webber	Computerized executive function task performance fits a lower/higher-order organization but does not predict behavioural ratings
Malcolm Wright	The usefullness of the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) at an inpatient psychiatric unit in New Zealand-Aotearoa

Poster Presentation 4 - ABI Rehabilitation – Friday afternoon tea

Sophie Brassel	Speech-Language Pathologists' Views of Using Virtual Reality for Managing Cognitive-Communication Disorders Following Traumatic Brain Injury
Sophie Brassel	Current Uses and Opinions of Virtual Reality: A Content Analysis of Twitter Data to Inform Brain Injury Rehabilitation
Alexandra Davies	Does cognitive rehabilitation combined with psychological therapy result in better functional outcomes following acquired brain injury than psychological or cognitive intervention alone? A systematic review and meta-analysis
Jacinta Douglas	Finding focus: The process of deriving person-centred goals in a multi-component community connection program (M-ComConnect) for people with severe traumatic brain injury
Janelle Griffin	Survey of patient experiences of compensatory and metacognitive rehabilitation following participation in a prospective memory rehabilitation treatment program
Charlotte Hendryckx	Challenging Behaviours in adults with traumatic brain injury: how to cope on a daily basis
Areti Kennedy	From proposal to implementation: Reflections and learnings from the ABI Transitional Rehabilitation Service (ABITRS) Pilot Project
Felicity Lorains	Effectiveness of Compensatory Memory Group Training Versus Computerised Cognitive Training for Improving Memory Functioning Following Acquired Brain Injury: A Pilot Randomised Controlled Trial
Georgina Mann	The Acquired Brain Injury Community REhabilitation Services OuTcomes CohoRT Study (ABI-RESTaRT), 1991-2020
Jodie McGregor	Improving person-centred practice in behaviour support within an inpatient rehabilitation setting
Rebecca Seeney	Getting research closer to practice: Establishing an Occupational Therapy Clinician-Researcher position within a Brain Injury Rehabilitation setting
Kerrin Watter	Do I Really Have To Ask That?! Supporting the implementation of a keyworker role in interdisciplinary ABI community rehabilitation
Kerrin Watter	From "It was fabulous" to "What rehabilitation?": ABI consumer experiences of ABI vocational rehabilitation in Queensland
Nina Wegener	Communication tools for the job: Rehabilitation resources to support better workplace communication after ABI
Nicole Weir	Interdisciplinary client-centred goal setting in a brain injury rehabilitation unit: A preliminary discussion.
Adelene Yap	Reducing life time cost of care by providing longer term rehabilitation following catastrophic traumatic brain injury at a community based residential rehabilitation service in Perth, WA. A single case study

Poster Presentation 5 - ABI and Brain Tumour - Saturday afternoon tea

Mitchell Byrne	Post traumatic amnesia duration as a predictor of cognitive outcome in a litigating, non-malingering traumatic brain injury sample
Jai Carmichael	Genetic moderation following traumatic brain injury: What is it, why does it occur, and how do we address it?
Michaela Filipcikova	Social Disinhibition after severe TBI: A systematic scoping review of predictors, prevalence, associated symptoms and outcomes
Mamiko Fujiwara	The Relationship Between Discourse Deficits and Neuropsychological Functions After Traumatic Brain Injury
Michaela Grech	Supporting young survivors of stroke
Sarah Green	Apathy and Depression as Predictors of Activities of Daily Living Following Stroke and Traumatic Brain Injuries in Adults: A Meta-Analysis

Arielle Levy	Cognitive complaint after adult civilian mild traumatic brain injury: A systematic review and meta-analysis
Phyllis Liang	“Don’t Dare to Go Out”: Stroke Experiences During the COVID-19 Pandemic
Phyllis Liang	“My Life Is Turned Upside Down”: A Systematic Review on the Lived Experiences of Stroke
Mie Matsui	Effect of cognitive reserve on working memory in patients with frontal lobe tumors
Ryuta Ochi	Hyper- and Hyposensitivity in Patients with Brain Tumors
Marilou Séguin	Systematic review of cognitive and behavioral outcomes following early TBI
Sarah Skromanis	Understanding social disinhibition in acquired brain injury: drawing upon first-person experience
Adelene Yap	Piloting an interdisciplinary, outcomes based approach to Prolonged Disorders of Consciousness (PDOC) at a community based residential rehabilitation service in Perth, WA with a client with complex behavioural presentation

Poster Presentation 6 – Older Adults - Saturday afternoon tea

Kelly Atkins	A protocol outlining a multidisciplinary approach to preventing postoperative delirium in older adults: The PROTECT Trial
Lisa Bransby	The cumulative effect of cognitive engagement on cognitive function in middle-aged adults
Mairi Crombie	The Impact of Education on the Clock Drawing Test (CDT): A Systematic Review
Katherine Franks	Association of psychological stress with risk of mild cognitive impairment: A systematic review and meta-analysis
Natalia Gawron	Neuropsychological functioning and discourse in individuals with early stage Vascular Dementia vs patients with early stage Alzheimer’s Disease
Carolina Guerra	Motor Reserve and current Physical Activity in aging: relations with Executive Functions
Dana Pourzinal	Systematic review of Magnetic Resonance Imaging studies exploring hippocampal correlates of episodic memory in Parkinson’s disease
Gail Robinson	Can a goal intervention improve language fluency in healthy and pathological ageing?
Ana Natalia Seubert-Ravelo	Cognitive characteristics and frequency of Mild Cognitive Impairment in early-onset Parkinson’s disease patients with short-, mid-, and long-term disease duration
Nicole Skea	Evaluating the Patient Impact of Delirium in Australian Acute Care
Sze Yan Tay	Discrepancies between perceived driving abilities in the elderly with cognitive impairments (ECI) and their caregivers - How cognition and functioning plays a part
Cho Kwan Tse	Prospective Memory Training in Older Adults: A Systematic Review and Meta-Analysis
Katharine Vearncombe	A multi-disciplinary approach for treatment and management of atypical Semantic Dementia – A case report
Adrianna Wasinska	The analysis of genetic variability of MT-RNR2 and MT- RN2L5 genes encoding humanin in patients diagnosed with Parkinson’s disease

DATABLITZ Electronic Sessions
Session 7 – Thursday afternoon tea
Session 8 – Friday afternoon tea
Session 9 – Saturday afternoon tea

Electronic Session	First Name Surname	**Submission Title**

7	Alexandra Armstrong	Patterns of valued living and relationships with psychological and occupational outcomes in community-dwelling acquired brain injury survivors
7	Adam McKay	The Perspective of Nurses in Managing Patients with Agitation After Traumatic Brain Injury
7	Danielle Sansonetti	Self-awareness in adults with acquired brain injury: A systematic review of theory to inform rehabilitation
7	Thomas Borchard	The Brief-Executive-function Assessment Tool: A new cognitive impairment screening tool for alcohol and other drug services
7	Mai Nguyen	Psychological and Cognitive Barriers to Diabetes-Related Foot Complication Treatment: Clinicians' Perspectives
7	Dion Braganza	Interictal Cognitive Deficits in Migraine Sufferers: A Meta-Analysis
7	Jesse Shapiro	No multivariate difference in cognitive recovery between children with normal and delayed recovery from concussion: a longitudinal study
7	Sarah Knight	The development of a theory informed, behaviour change intervention to improve goal setting for children with paediatric acquired brain injury and their families during rehabilitation
7	Bridgette Semple	Environment enrichment versus social grouping has differential effects on long-term behavioral deficits in a mouse model of pediatric traumatic brain injury
7	Jessica Hazelton	Getting to the heart of it: A multi-centre international investigation of cardiac interoception in neurodegenerative syndromes
7	Libby Callaway	Validating social impact domains with the Huntington's Disease community: a qualitative study
7	Amie Foran	The QuickSort: a brief, new cognitive screen for older adults
8	Lee Cubis	Components of effective hospital discharge for people with acquired disability and complex needs: A Scoping Review
8	Kerrin Watter	Moving from 'Gaps' to 'Networks': Service provider experiences and views of ABI vocational rehabilitation in Queensland
8	Bleydy Dimech-Betancourt	User experience and preliminary evaluation of a simulator-based driver rehabilitation programme for people with acquired brain injury
8	Laura De Lacy	Shopping routines: a qualitative study of adults living with a traumatic brain injury
8	Lauren Libeson	Factors Associated with Employment Stability Following Traumatic Brain Injury of Those Who Have Received Comprehensive Vocational Rehabilitation
8	Megan Topping	Factors that Influence the Quality of Paid Support for Adults with Acquired Neurological Disability: Scoping Review and In-Depth Interviews
8	Matt Thomas	The factor structure of the Hospital Anxiety and Depression Scale (HADS) in Australian adults with traumatic brain injury and a general community sample
8	Matt Thomas	The factor structure of the Rivermead Post Concussion Symptoms Questionnaire in Australian adults with traumatic brain injury
8	Michelle McIntyre	The Guddi Way Screen: Developing a culturally sensitive cognitive screen for Aboriginal and/or Torres Strait Islander Peoples
8	Kimberley Wallis	Assessing Social Cognition in Acquired Brain Injury: Results from a Scoping Review
8	Kimberley Wallis	Development of a Clinical Assessment Tool for Social Cognition in Acquired Brain Injury: A Validation Study
8	Sarah Chuah	Are individuals ready for telehealth after a moderate to severe traumatic brain injury? A cross sectional study
8	Hana McDonald	The diagnostic validity of neuropsychological methods for the pre-surgical lateralization of seizure foci in temporal lobe epilepsy: A systematic review and meta-analysis

8	Suzane Vassallo	Clinical indicators of visual deficits following chronic severe traumatic brain injury
8	Hayley Pickering	Visuospatial Memory and Vocabulary Relations in School-Aged Children: A Systematic Review and Meta-Analysis
8	Bethanie Menzies	Effects of paediatric sleep disordered breathing on cognition: a systematic review with meta-analysis
8	Cecilia Law	Factor Structure of the Parent and Child Memory Questionnaires: Exploratory Factor Analysis with Typically Developing Children
8	Ché Phillips	Recovery after Severe Traumatic Brain Injury: Return to Life and Work as a Physiotherapist
8	Amy Ford	A review of the insider experience of close personal relationships following stroke
8	Rachael Rietdijk	interact-ABI-lity: A new online resource for training carers and others to communicate with people with acquired brain injury
8	Alena Murray	Vocational rehabilitation following acquired brain injury: a systematic scoping review
8	Penni Burfein	Return to work for stroke survivors with aphasia: Preliminary findings of a scoping review
8	Vivian Leung	Efficacy of memory training for multiple sclerosis: A multiple-baseline single-case study
8	MD. SHAHANUR HOSSAIN	Adaptation of the Brain Injury Questionnaire of Sexuality into Bangla and initial findings from a sample of Bangladeshi traumatic brain injury patients
8	Sharon Truter	Neuropsychological Test Performance in a Non-clinical Multilingual Group of South African Children with Advantaged and Disadvantaged Education
8	Mairi Crombie	Examination of the Validity of the 'Papadum Test': An Alternative to the Clock Drawing Test for people with Low Levels of Education/Literacy
8	Farzaneh Mashhadi	The Impact of Childhood Adversity and Lifespan Trauma on Decision-Making and Theory of Mind Abilities in Homeless and Precariously Housed Adults
8	Katherine Russell	The Relationship Between Length of Hospitalization, Mood, and Cognition in Recovered COVID-19 Patients
8	Olaf Chmura	Influence of genetic variability on the clinical course of Parkinson's disease and efficacy of levodopa treatment
8	Jan Koper	Vitamin D Receptor Mutations Influence on Course of Parkinson's Disease in Patients Treated With Levodopa
8	Joanna Ho	ECT DVD: Let's Talk About It!
9	Gail Robinson	Development and validation of the Brief Executive Language Screen (BELS) for frontal aphasia
9	Melissa Brunner	Are there any social media skills training resources available for people with a brain injury? Results of a scoping review
9	Katherine Cameron	Getting on with the job: Developing a better understanding of cognitive-communication impairments and work
9	Amelia Hicks	Amyloid-β and tau imaging in chronic traumatic brain injury: A case-control study
9	Bojana Sarkic	Frequency of peripheral vestibular pathology following traumatic brain injury: a systematic review of literature
9	Regina Schultz	Neuropsychological recovery in the first 12 months following severe traumatic brain injury: a longitudinal study with serial assessments
9	Mark Pertini	Childhood dementia in Australia: Population data and patterns of cognitive and neurobehavioural symptoms associated with the most common form of childhood dementia
9	Amanda Osborn	Cognitive, behavioural and psychological outcomes in individuals with sagittal synostosis: a meta-analysis examining the impact of surgical status

9	Anita Dharan	Cognitive comorbidities in juvenile absence epilepsy
9	Nga Yan Tse	Memory Rehabilitation in a Group-based Format: What can be learned from participant feedback?
9	Nicole Sugden	Is it important? Memory aid usage mediates relationships between task importance and prospective memory performance
9	Marina Cavuoto	Exploring the impact of everyday memory difficulties in transient epileptic amnesia: A qualitative study
9	Jennifer Makovec Knight	Reliability of Self-report for Injury Surveillance in Junior Australian Football

Abstracts presented at the 2021 Virtual Event International Neuropsychological Society

June 30 - July 3, 2021

WORKSHOP 1

The Shocking Truth About Electrical Injuries

Prof Neil H. Pliskin

University of Illinois, USA

Learning objectives:

1. Increase understanding of electrical injury (EI) parameters and mechanisms of injury
2. Discuss common physical, cognitive, and psychological sequelae of EI
3. Describe factors that influence recognition of cognitive changes in electrical injur
4. Identify common psychiatric changes that emerge after electrical injury

Background:

Electrical injury (EI) is a unique, often complicated trauma that is associated with short- and long-term medical, psychological, and social sequelae. Following recovery from initial injuries, problems often persist and the long-term effects of EI frequently include physical concerns and chronic pain, problems with emotion regulation, and cognitive difficulties. If not adequately recognized or managed, these sequelae can interfere with the survivor's functioning and quality of life. The neuropsychological issues that can arise following electrical shock injuries is the subject of this presentation. Theories underlying CNS dysfunction in electrical injuries will be presented along with information highlighting key differences with other forms of traumatic brain injury.

WORKSHOP 2

Wisdom, memories and connections: Towards a more holistic approach to neuropsychology with Aboriginal and Torres Strait Islander peoples

Dr Kylie Radford & Mr Terry Donovan NeuRA, Randwick, NSW, Australia

Learning objectives: In summary, this workshop aims to help participants of all levels of prior knowledge/experience to:

1. Reflect on and critique the meaning of cultural safety and culturally responsive neuropsychology, and identify gaps and opportunities to enhance care;
2. Discuss disparities in neurocognitive disorders in a sociocultural context across Indigenous populations, particularly in Australia;
3. Reframe thinking on health, ageing and dementia through examples of research and community collaboration with Aboriginal and Torres Strait Islander peoples.

Background: The First Nations of Australia are among the oldest continuous cultures in the world. However, the health and wellbeing of this population has declined sharply since European colonisation. It is becoming increasingly apparent that there are significant disparities in brain health across the lifespan, including high rates of neurodevelopmental disorders, acquired brain injuries and neurodegenerative diseases. The evidence base and practice of neuropsychology in relation to Aboriginal and Torres Strait Islander peoples is in its infancy and greater attention needs to be paid to meeting the needs and expectations of this population, and enhancing cultural safety, healthcare and wellbeing outcomes. Using our research with older Aboriginal and Torres Strait Islander peoples as the basis, and incorporating the perspectives of research participants, this workshop will focus on three key learning objectives. First, we will explore what it means to have "the right people in the right services that cater for us in the way that we should be catered for" (Wettasinghe et al., 2020), using lived experience, population surveys and service development case studies of relevance to neuropsychology. Second, we will consider the current evidence on disparities in neurocognitive disorders for Aboriginal and Torres Strait Islander peoples and situate this in the broader sociocultural and historical context of "all over the years, all that's happened to us" (ibid.), including social determinants of health and issues of social justice. Third, we will discuss the importance of strengths-based, participatory action and community driven approaches as effective and practical ways forward, acknowledging that among First Nations, "Elders deserve our respect and admiration for their resilience, shared knowledge and experience, and their invaluable contribution to our communities and country" (Naden, 2018 in Radford et al., 2019, p.15).

WORKSHOP 3

Accelerating recovery from child concussion requires a collaborative multidisciplinary approach

Prof Vicki Anderson, Dr Michael Takagi, Dr Vanessa Rausa, Dr Katie Davies and Dr Gavin Davis
Murdoch Children's Research Institute, Melbourne, Australia

Learning Objectives:

1. Understand the current evidence regarding recovery from child concussion and risk factors for persisting symptoms
2. Become familiar with current clinical guidelines, tools for sidelines assessment and post-acute screening
3. Become familiar with evidence-based, multidisciplinary, multimodal intervention for persistent post-concussion symptoms in children and adolescents

The first 60-90 minutes would be didactic and second part divided into 2 groups with psych-ed/psychologist in one stream and the other exercise and physio assessment & treatment

WORKSHOP 4

Zooming into the details: a practical guide to conducting assessments of cognition, language and mood using telehealth

A/Prof Rene Stolwyk, Dr Wendy Kelso & Dr Kristina Haebich
Turner Institute for Brain and Mental Health, School of Psychological Sciences, Monash University, Melbourne, Australia
Neuropsychiatry, Royal Melbourne Hospital, Melbourne, Australia
Murdoch Children's Research Institute, Melbourne, Australia

Learning objectives:

Following attendance of this workshop, attendees will be able to:

1. Critically evaluate a range of contextual and client factors to ascertain in which circumstances telehealth assessment of cognition/language/mood is appropriate
2. Demonstrate key telehealth skills relating to preparing for telehealth consultations, clinical interview, formal cognitive/language/psychological assessment, and client feedback/psychoeducation
3. Effectively disseminate telehealth assessment findings to relevant stakeholders and ensure appropriate client follow up

WORKSHOP 5

Executive function assessments as cognitive markers of pathological aging: Evidence from healthy aging and dementia

A/Prof Sarah E. MacPherson
University of Edinburgh, Scotland, UK

Learning objectives:

1. Describe some of the existing literature on executive function assessment in healthy and pathological aging.
2. Introduce tests that are sensitive to pathological but not healthy aging.
3. Discuss why these tests might be better cognitive markers of pathological aging.

WORKSHOP 6

Implementation of face to face and online communication partner training programs in ABI: A step by step implementation workshop

A/Prof Emma Power
UTS, Sydney, NSW, Australia

Learning objectives:

1. Describe theoretical approaches to the: - Evidence-practice gap and knowledge translation/implementation -Barriers & Facilitators to best practice implementation - Behaviour change approaches to improve implementation of evidence into health care
2. Describe the latest evidence-based Communication Partner Training for healthcare workers and familiar communication partners in ABI – Identify and discuss any evidence-gaps in your practice
3. Explore, analyse, and reflect on the process of implementation of CPT in your service using the Knowledge-to-Action (KTA) Framework (Graham et al., 2009).
4. Formulate a brief action plan to further explore and apply implementation knowledge to your clinical services after the workshop.

Background:

This hands-on workshop aims to provide participants with a practical learning experience on implementation of best practice in Communication Partner Training for Acquired Brain Injury (inclusive of stroke, brain injury and dementia). Participants will be provided with an updated and focused toolkit for implementation of CPT. Learning strategies will include a mixture of presentation of new knowledge, illustrative cases, group discussion and interactive tasks to increase familiarity with the theoretical and practical concepts in the workshop. A relevant list of resources including references and EBP tools will be provided. The workshop will be of interest to speech pathologists but also other professionals who wish to engage with clients with communication difficulties and to embed that practice into clinical rehabilitation. Students are welcome.

PLENARY 1

Professor Neil H Pliskin

What is the true value of neuropsychological services and how will they need to change to stay relevant?

It is well known that inequality in access to neuropsychology services exists around the world. Many countries have few neuropsychologists to provide evaluations or interventions for people with brain-related conditions. Yet, as the world copes with the aftermath of the COVID pandemic, the need for neuropsychological services will also be greater. While countries have different models of healthcare delivery and availability of neuropsychological services, in the US, there is a healthcare transformation occurring and as such questions such as what is the true value of neuropsychology arise. This presentation will address this question of relevancy of neuropsychological services, what research priorities are needed to support the efficacy of our services and what the future may require from neuropsychologists as a field in order to adapt to changing healthcare needs in an uncertain healthcare environment.

Objectives:

1. Describe studies that have documented clinical efficacy of neuropsychological services in multiple patient populations
2. Discuss potential roles of neuropsychological services in the post-COVID era

PLENARY 2

Sarah-Jayne Blakemore

Social risk taking in adolescence

Adolescence, defined as 10-24 years, is a period of life often characterised by behaviours that can appear, prima facie, irrational such as dangerous risk-taking and impulsivity. However, these behaviours can be interpreted as adaptive and rational given that a key developmental goal of this period of life is to mature into an independent adult while navigating a social world that is unstable and changing. Research over the past two decades has demonstrated that social cognitive processes involved in navigating an increasingly complex social world develop, social influence is an important determinant of decision making and areas of the social brain undergo substantial development across adolescence. The findings suggest that adolescence might be a sensitive period of social development.

PLENARY 3

Kylie Radford

"Healthy ageing is your mind staying young": Longevity, brain health and dementia in Indigenous peoples

The Aboriginal and Torres Strait Islander population of Australia is ageing rapidly, and is projected to exceed half a million older people (ages 45+) by 2051. With increasing lifespan healthy ageing is becoming synonymous with healthy brain ageing, and dementia prevention is now a national and global priority. However, Aboriginal and Torres Strait Islander peoples have higher rates of all-cause dementia, from relatively younger ages of onset, compared to non-Indigenous Australians and many other populations. Culturally safe dementia diagnosis, health and aged care pathways, and dementia literacy are thus emergent community health priorities, but so too is dementia prevention. There is accumulating evidence for potentially modifiable risk factors across the life course, and targeting these could have a major impact on reducing rates of dementia. However, there is considerable diversity across populations in the nature and prevalence of dementia risk factors, currently little evidence related to early life determinants, and a need for co-design and evaluation of multi-factorial and culturally responsive risk reduction initiatives. The Koori Growing Old Well Study (KGOWS) was initiated in 2008 to determine the rates of dementia and cognitive decline in older Aboriginal and Torres Strait Islander peoples living in urban areas of eastern Australia, where the majority of this population reside. This study also aimed to validate a number of cognitive tests, examine sociocultural and biomedical risk (and protective) factors, and translate these findings into policy and practice. Working in close collaboration with five Aboriginal communities, KGOWS found higher prevalence and incidence of dementia (predominantly Alzheimer's disease) and cognitive decline at age 60 years and older; highly consistent with findings in remote settings. A range of potentially modifiable risk factors across the lifespan were identified, including early life stress and adversity, low education, low mid-life occupational complexity, history of traumatic brain injury and stroke, hearing loss, and polypharmacy. Older age, male sex, and APOE-ε4 were also significant risk factors for cognitive decline over six years. Life-course social determinants of health appear to play a substantial role in disparities in brain health and dementia for Indigenous peoples and need to be addressed in conjunction with appropriate late-life risk reduction programs, to improve healthy ageing and longevity.

PLENARY 4

Sarah E MacPherson

Inter-individual variability in frontal lobe functions: Studying executive functions and social cognition in brain injured and healthy brains

Several tests are used in clinical practice and research that have been devised to assess the functions subsumed by the frontal lobes of the brain. These tests include tests of executive functioning that assess the ability to organize thought and action based on intentions and goals, especially in novel, complex or difficult situations. They also include tests of social cognition that assess higher order cognitive processes that allow individuals to process and interpret contextually specific social information to successfully interact with others. While these tests all tap “frontal functions”, different tests tap processes associated with distinct regions of the frontal lobes and there is considerable inter-individual variability in performance. This talk will discuss some of the key influences on inter-variability in executive functions and social cognition including neuroanatomical, cognitive and environmental factors based on studies of patients with focal frontal lesions and healthy aging.

Emma Power

“I wouldn’t want to open a can of worms”: Sexuality and Intimacy in acquired brain Injury

Sexuality and intimacy are at the core of being human and are defined and expressed differently from individual to individual. Recently, there has been increasing research into sexuality and intimacy in Acquired Brain Injury (ABI) as well as increased interest from clinical services in addressing intimacy and sexuality. Despite some forward momentum, these difficult conversation topics remain challenging in clinical care, mirroring the taboos and silence in society where young and ‘healthy’ individuals are privileged in these conversations. Recent, public discourse around the appropriateness of intimacy-based participation goals has occurred in relation to the National Disability Insurance Scheme (NDIS), and the challenge remains to keep these conversations going and centred on individual’s needs. This presentation will raise current issues in relation to sexuality and intimacy research and practice in ABI drawing on contemporary literature, cases and public campaigns and discussion. The principle objectives of the talk is to enable us to reflect on our practice in our services and to encourage the start (or the continuation) of meaningful conversations as well as the drive to develop interventions for sexuality and intimacy for the benefit of our clients and their families.

PLENARY 5

Rene Stolwyk

From Kanyapella to the COVID ward and beyond: past, present and future applications of telehealth within brain injury rehabilitation

Clinical uptake of telehealth rose dramatically during the COVID-19 pandemic, as the potential for telehealth to mitigate infection control risk and enable continued delivery of essential healthcare services, was realised. This was a time of rapid upskilling, where many clinicians and clients first experienced the benefits and opportunities associated with telehealth. However, it was also a time of great uncertainty, as clinicians grappled with limited training and resources, concerns over quality of care and practical barriers to service delivery. Over recent months, significant advancements in telehealth governance and infrastructure have been made. Further, our understanding of what factors facilitate the success and/or failure of telehealth implementation and delivery have been elucidated. It will be these issues that will explored within this keynote address, in addition to a discussion of the future of telehealth within brain impairment, including potential future applications beyond COVID-19 and a reflection of the role of technology more broadly within our field.

Session 1

Accelerated long-term forgetting: A hidden memory disturbance in children with epilepsy.

Lah, Suncica[1]

[1]School of Psychology, University of Sydney

Background and aims: Standardised memory assessments often do not relate to subjective memory complaints and are not aligned with theories of long-term memory formation. Hence, we set to investigate a form of memory disturbance that remains undiagnosed on standardised memory assessments.
Method: We conducted a series of studies that involved children with genetic generalised epilepsy (GGE) and children with temporal lobe epilepsy (TLE). We developed verbal and visual memory paradigms that involved face to face learning and recall after short (20-30 min) delays, and remote recall at long (days to weeks) delays.
Results: On materials developed to measure recall at long delays, children with GGE and children with TLE recalled significantly fewer bits of information after long, but not short delays, compared to healthy control children: they showed accelerated long-term forgetting (ALF). While we attributed this finding to seizures, in our longitudinal study that involved children with GGE we found that ALF persisted even when seizures resolved, and children were taken off anti-epileptic medication. Recently, we examined the functional impact of ALF and the role of additional rehearsals on preventing ALF, which is important for treatment.
Conclusions: Accelerated long-term forgetting (ALF) is present, persistent and of functional significance in children with GGE and TLE but remains undetected on standardised memory tests.
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Exposure to epilepsy medications in pregnancy and their impact on child cognition and behaviour

Wood, Amanda[2]

[2]School of Psychology, Deakin University, Burwood campus, Victoria, Australia

Background and aims: Anti-seizure medications are effective tools in the management of epilepsy. Their use in women, however, has been associated with fetal anomalies that extend beyond physical features to domain-specific cognitive and behavioural impairments. We evaluated the long-term consequences for children exposed prenatally to anti-seizure medications.

Method: A series of studies will be presented that examined the early signals of neuropsychological impairments, as well as the subsequent prospective longitudinal cohort studies. We also completed an observational cohort study of clinically-diagnosed Fetal Valproate Syndrome, examining the magnitude and nature of intellectual deficits experienced by affected offspring of women with epilepsy.

Results: Children exposed to sodium valproate have lower IQ, poorer language skills, increased rates of autism traits. Our work has generated new diagnostic and management guidelines for what is now termed Fetal Valproate Spectrum Disorder, and has altered prescribing practices internationally. A summary of key results that influenced policy will be presented.

Conclusions: Children whose mothers who take specific anti-seizure medications are at increased risk of poor neurodevelopmental outcomes. Whilst these studies relate to women with epilepsy, it is likely that these effects extend to other groups in which, for example, sodium valproate is used. Accordingly, neuropsychological assessment of children should include an account of all medicine exposures in addition to substances such as alcohol, given the long-term deleterious impact they may have on brain development.

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Longitudinal changes in emotional and psychosocial functioning and impact of the family environment following resective surgery in children with drug-resistant epilepsy

Phillips, Natalie L.[1]; Widjaja, Elysa[1] and Smith, Mary Lou[1]
[1]Hospital for Sick Children, Toronto, Canada

Background and aims: Paediatric drug-resistant epilepsy (DRE) is associated with increased risk of emotional dysfunction and poorer health-related quality of life (HRQOL) and can impact the whole family. Improving seizure control through resective epilepsy surgery may improve outcomes. This research sought to examine child and caregiver psychosocial and family functioning following surgical compared to non-surgical treatment of children with DRE.

Method: Data from a longitudinal, multicentre cohort study of children (4-18 years) with DRE who underwent evaluation for surgical candidacy across Canada will be presented. Paediatric neurologists reported on seizure and clinical factors. Children and their caregivers completed self-report measures of anxiety and depression, and caregivers completed measures of child HRQOL, and family functioning at initial assessment, and 0.5-, 1-, and 2-years later.

Results: Children with DRE reported improvement in anxiety and depression, irrespective of whether they achieved seizure control, across the 2-years following surgery. In contrast, children with DRE who did not undergo surgery, but achieved seizure freedom, reported worsening of depressive symptoms. Caregivers reported a reduction in their depressive and anxiety symptoms over time, but caregivers of children who achieved seizure control following surgical or non-surgical treatment reported fewer depressive symptoms compared to caregivers of children with continued seizures. Poorer baseline functioning was associated with poorer child and caregiver emotional functioning at 1-year. When we examined child HRQOL outcome we found that achieving seizure control following surgical and non-surgical treatment was associated with improved HRQOL, but not for families identified as having few resources and social supports at initial evaluation.

Conclusions: Psychosocial functioning of the child, as well as the family environment, should be assessed during the presurgical evaluation in order to better identify at risk-families and implement early intervention and supports to promote better outcomes for children with DRE in the long-term.

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An integrative model to support clinical decision making in paediatric epilepsy surgery.

Gonzalez, Linda[1,2] and Wrennall, Jacquie[2,3]
[1]Matrix Neuropsychology, Melbourne
[2]Brain & Mind, Murdoch Children's Research Institute, Melbourne
[3]Mental Health, Royal Children's Hospital, Melbourne

Background and aims: Clinical decision-making in paediatric epilepsy surgery is a complex undertaking, as the clinician needs to consider a range of developmental and neurological variables. Such decision-making relies on clinical experience that can take years to accumulate and can be difficult to impart to others. The current study sought to address these gaps by developing a clinical model or heuristic to guide clinical decision-making in paediatric epilepsy surgery.

Method: Extensive review of the paediatric epilepsy surgery literature.

Results: A clinical model was proposed based on empirical evidence to suggest that the following dimensions should be considered in making clinical decisions in the context of paediatric epilepsy surgery: 1) developmental; 2) epilepsy-related; 3) psychological; 4) family; 5) child-specific; 6) cognitive. A number of more specific considerations were delineated for each of these dimensions. The

integrative model recognised that there are interactions within and between these factors and the clinical weight given to each dimension will vary at an individual level.
Conclusions: It is contended that this model has clinical utility as it provides an evidence-based rationale and explicit framework to support decision-making in paediatric epilepsy surgery.
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Session 2

Do Reasons for Living and Other Protective Factors Buffer against Psychological Distress and Suicide Ideation Following Severe TBI? A Cross-Sectional Study

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Background Psychological distress including depression, hopelessness and suicide ideation are serious consequences of severe traumatic brain injury (sTBI). Little is known about whether positive ‘protective factors’ such as self-esteem, proactive coping, and resilience act as a buffer to psychological distress. Furthermore, although the Reasons for Living Inventory is the global gold standard tool to determine protective factors in suicide risk assessment, it has not been tested within the TBI population.
Objective: To examine correlations among potential protective factors and psychological distress after sTBI.
Method: A total of N=50 adult community clients of the Liverpool Brain Injury Rehabilitation Unit with sTBI completed a battery of questionnaires exploring negative psychological variables and positive protective factors.
Results: The 50 study participants were mostly male (72%), with an average age of 34.2±14.2 years and 3.2±3.4 years post-injury. Almost half the sample (48%) reported mild to severe depressive symptoms, with 36% expressing some degree of suicide ideation within the previous year. Significant inverse correlations were found between the protective factors and psychological distress variables. In particular, reasons for living (-.654, p<.001), resilience (-.600, p<.001) and self-esteem (-.755, p<.001) were all strongly negatively correlated with suicide ideation. A series of multiple regression analyses tested a model of protective factors with the psychological distress variables. All models were significant ($p < .05$) and accounted for significant proportions of the variance in psychological distress (depression F(2, 47) = 17.15, Adj R^2 .397; hopelessness F(1, 48) = 48.89, Adj R^2 .494; suicide ideation F(3,46) = 43.73, Adj R^2 .724). For suicide ideation, self- esteem (β =-0.09), reasons for living (β= -0.02) and resilience (β=-0.02) were all significant individual predictors (p<05).
Conclusions: Results suggest that protective factors can play a role in modulating negative psychological outcomes for after sTBI. Finding ways to build self-esteem and resilience could reduce long-term psychological morbidity post-injury. The Reasons for Living Inventory showed promise as an important screening tool in evaluating suicide risk after sTBI.
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Psychological wellbeing and caregiving strain in significant others of individuals with ABI participating in a transitional rehabilitation service: Outcomes in the first year post hospital discharge

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Background and Objectives: Following an individual’s acquired brain injury (ABI), significant others report negative psychological wellbeing associated with their caregiving role, including heightened caregiver strain and symptomatology of depression, anxiety, and stress during the transition period from hospital to home. A transitional rehabilitation service for individuals with ABI (ABI TRS) has been piloted over five years in Brisbane Queensland, providing a model of care that includes specific attention to family needs through individual and group interventions. Embedded service research has investigated the impact of ABI TRS on significant other outcomes, including psychological state and caregiver strain.
Method: Consenting significant others of clients of ABI TRS completed measures at several time points: baseline (discharge from hospital; n=78), three months (time of completion of ABI TRS program; n=64), and 12 months post hospital discharge (n=41). The assessment battery included self-report of psychological symptoms measured by the Depression Anxiety and Stress Scale (DASS-21) and caregiver strain measured by the Caregiver Strain Index (CSI). Data were descriptively and statistically analysed by the Queensland Cyber Infrastructure Foundation using random intercept models with subsequent pairwise comparison between time points.

Results: Significant others showed a statistically significant difference in CSI scores between baseline and three months (p=0.038) and baseline and 12 months (p=0.042) representing a decrease in caregiver strain at three and twelve months. Analysis of DASS-21 data showed no statistically significant changes in the depression, anxiety or stress scores across all timepoints, suggesting no change (including worsening) in psychological state for caregivers within the first year post hospital discharge. Additionally, median caregiver strain scores and median DASS-21 subscale scores remained below the cut-offs for clinical concern at all three time points.
Conclusions: Reported caregiver strain levels were lower immediately after participation in ABI TRS and at 12 months post hospital discharge. Significant others also reported maintenance of emotional wellbeing, measured by no change in depression, anxiety and stress scores in the first year post hospital discharge. These findings lend support to the sustained positive impact of the ABI TRS family-centric model of care for significant others in the community setting.
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Evaluation of a Multi-component Community Connection program (M-ComConnect) for people with severe traumatic brain injury: Preliminary results

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Background and Objectives: Social isolation is a frequent problem for people with severe traumatic brain injury (TBI). Although the problem is well documented, attempts to develop effective interventions to improve community connection have seen relatively little success. M-ComConnect is an individualised intervention with the key objectives of increasing social activity and supporting community integration. In this paper we report pre- and post-intervention group evaluation results on community integration (CI) and health related quality of life (HRQOL) and illustrate the impact of the program with a single participant (Sarah).
Method: M-ComConnect was delivered on 25 occasions in varying contexts with adults with severe TBI. HRQOL was measured using the EuroQol global health rating score; CI was measured using the Community Integration Questionnaire-Revised (CIQ-R). Paired sample *t*-tests were used to evaluate the impact of the intervention and we hypothesised a significant increase in scores on both measures. Sarah is a woman in her 50’s who sustained TBI 24 years ago and hypoxic brain injury secondary to a seizure 11 years later. Her goals were to start writing a book and to attend a writing group. Primary outcome measures were number of, and satisfaction with, daily interactions. A-B-A single case experimental design with multiple probes (2-wk baseline, 18 individual sessions, 2-wk return to baseline) was used to evaluate the impact of the intervention. Secondary outcome measures (emotional function and participation) were administered pre- and post-intervention and at follow-up. Post-intervention, semi-structured interviews were conducted and analysed using thematic analysis (Braun & Clarke, 2006).
Results: Group scores on both measures increased significantly from pre- to post-intervention (EuroQol: Pre M=64.4, SD=21.2, Post M=71.0, SD=15.3, $t(24)$=-1.7, p=.04; CIQ:R: Pre M=14.7, SD=4.8, Post M=16.2, SD=5.4, $t(24)$=-2.33, p=.02). In Sarah’s case, statistical analysis demonstrated significant increase in her daily interactions (Tau-U=0.43; p=0.02). Positive changes on measures of emotional function and participation were found. Analysis of interview data revealed an overarching theme of ‘uncovering me’.
Conclusion: The results demonstrate that M-ComConnect is a promising intervention to facilitate change in social participation with broader implications for building a positive sense of self for people living with the consequences of severe TBI.
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A Single-Case Experimental Evaluation of a New Group-Based Intervention to Enhance Adjustment to Life with Acquired Brain Injury: VaLiANT (Valued Living After Neurological Trauma)

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Background and Objectives: Acquired brain injury (ABI) is associated with long-term cognitive and emotional changes that can result in poor adjustment. Evidence regarding the efficacy of rehabilitation programs targeting cognition and mood separately remains mixed and these interventions do not consistently translate into better adjustment or participation in meaningful activities. Targeting valued living may be a promising avenue for enhancing outcomes relating to activity, participation, and quality of life. This Phase I study evaluated the feasibility, acceptability, and preliminary efficacy of VaLiANT, a new 8-week group intervention that uniquely

combines cognitive rehabilitation with psychological therapy to enhance valued living and improve adjustment following ABI.
Method: The study used an AB with follow-up single case experimental design (SCED) with randomisation to multiple non-concurrent baselines. Participation involved attending eight group sessions and assessments before, during and after the group. The target behaviour was valued living, assessed weekly by the Valued Living Questionnaire (VLQ). Secondary outcomes included measures of wellbeing, mood, self-efficacy, subjective cognitive complaints, and intervention acceptability. Target behaviour was analysed through a mixture of visual and statistical analysis while secondary outcome data was analysed via reliable change indices and descriptive analysis. Feasibility was evaluated by recruitment and retention rates and treatment adherence.
Results: There were eight participants (50% female, aged 26-65; 4 Stroke, 3 Traumatic Brain Injury, 1 Complex Epilepsy) with one lost to follow-up. Target behaviour data appeared variable, with no convincing patterns of improvement. However, reliable improvements were found for the majority of participants on secondary outcomes, particularly for measures of subjective wellbeing and anxiety symptoms. Delivery of the intervention was feasible and acceptability ratings were high across participants.
Conclusions: This study provided preliminary support for VaLiANT as a feasible intervention that has the potential to improve adjustment following ABI, justifying progression to a Phase II randomised controlled trial using wellbeing as the primary outcome.
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Development and validation of the Valued Living Questionnaire – Comprehension Support Version (VLQ-CS)

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Background and Objectives: Problems with the validity of the Valued Living Questionnaire (VLQ) within a sample of people with acquired brain injury (ABI) have been identified due to comprehension errors relating to its structure and content. These findings informed the development of an adapted version of the VLQ, the Valued Living Questionnaire – Comprehension Support (VLQ-CS), suited to the needs of individuals with cognitive and/or communication difficulties. Adaptations included the addition of pictorials aids and concrete examples to support interpretation of each domain, simplification of the instructions and rating scale, and alteration of the structure to rate consistency immediately after importance. We aimed to to investigate the construct validity and reliability of the VLQ-CS when administered to people with ABI.
Method: Adults with any type of non-degenerative ABI were invited to participate. Participants completed the VLQ-CS, and measures of convergent validity (Valuing Questionnaire, Hospital Anxiety and Depression Scale, Short Warwick-Edinburgh Mental Well-being Scale, Acceptance and Action Questionnaire-Acquired Brain Injury) and a measure of discriminant validity (Everyday Memory Questionnaire-Revised). A subset of participants completed the VLQ-CS at two time points 8 weeks apart to examine test-retest reliability.
Results: There were 57 participants, aged 19 – 79 years (M = 52.91, SD = 13.17), 30% were female (n = 17). Participants had a range of injury types, including stroke (n = 41), TBI (n = 9), CNS tumour (n = 4), encephalitis (n = 2), and multiple sclerosis (n = 1). Convergent and discriminant validity of the VLQ-CS were supported with strong positive associations between the VLQ-CS Composite scale and another measure of valued living (r = .65, p < .01) and mental well-being (r = .62, p < .01); a strong negative association with depression (r = -.58, p < .01); and a moderate negative association with anxiety (r = -.31, p < .05). Adequate test-retest reliability (r = .75, p < .01) was found for the Composite (main) score of the VLQ-CS.
Conclusions: Results supported the reliability and validity of the VLQ-CS, which shows promise as a measure of valued living for future research and clinical practice aiming to improve valued living and meaningful participation after brain injury.
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Patterns of valued living and relationships with psychological and occupational outcomes in community-dwelling acquired brain injury survivors

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Background and Objectives: Research has shown that valued living (VL), or acting consistently with personal values, is associated with improved functional and psychological outcomes in both clinical and non-clinical populations. To date, the role of VL in recovery after acquired brain injury (ABI) has only been explored in a traumatic brain injury (TBI) cohort. We aimed to replicate and expand past research by investigating whether VL may differ among ABI types; examining VL at different times post-injury; and exploring relationships between VL, psychological and occupational outcomes (i.e. work, volunteerism or study).

Method: Adults with any type of non-degenerative ABI were invited to participate in this observational cross-sectional study. Participants completed questionnaires measuring VL, depression and anxiety symptoms, changes in outlook and engagement in productive activity.

Results: There were 65 participants, aged 19 – 80 y (M = 52.37, SD = 13.75); 31% were female (n = 20). Participants had a range of injury types, including stroke (n = 43), TBI (n = 14) and other (n = 8). VL scores did not differ between stroke and TBI groups. When participants were grouped according to number of months post-injury, i.e., “Early” (n =21), “Mid” (n =21) and “Late” (n =23), visual inspection suggests VL was higher for those later post-injury, however there were no statistically significant differences between groups. Overall, VL was associated with better psychological outcomes (i.e. reduced depressive symptoms, $r = -.49$, $p \leq .001$ and increased positive change in outlook, $r = .33$, $p \leq .05$) and was higher for those engaged in at least one type of productive activity ($t(63) = 2.91$, $p = .005$); no differences were found when comparing those in paid employment with those not in paid employment.

Conclusions: Our findings highlight the importance of measuring and addressing VL in rehabilitation irrespective of type of ABI and stage of recovery. In particular, assisting people with ABI to engage in productive activities that are personally meaningful may be more valuable than a narrower focus on paid employment.

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The Perspective of Nurses in Managing Patients with Agitation After Traumatic Brain Injury

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Background and Objectives: Agitation is a common feature of early recovery after traumatic brain injury (TBI) and presents significant challenges to patient care including risk of injury to patients and staff. Nurses are often at the forefront of managing agitated behaviours in patients after TBI, but little is known about their experiences in this aspect of their role. This qualitative study explored how nurses understand, react to, and manage agitation in patients after TBI.

Method: Fifteen nurses who worked on an inpatient brain injury rehabilitation unit completed semi-structured interviews to understand the experience of managing patients with agitation. Thematic analysis was completed on interview transcripts.

Results: Thematic analysis identified four key themes relating to: 1) how nurses identify and define agitation in patients after TBI; 2) factors they consider important in shaping agitation; 3) strategies they use to manage agitation; and 4) the challenges and rewards of working with patients at an early stage of recovery after TBI

Conclusions: We found that nurses had a detailed understanding of agitation after TBI and its management, mainly through learning on the job. Nurses placed importance on working with the rehabilitation team in managing agitation and identified a lack of formal training and organisational support as barriers to feeling competent and confident in the role.

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Self-awareness in adults with acquired brain injury: A systematic review of theory to inform rehabilitation

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Introduction: Self-awareness is an important consideration in cognitive rehabilitation for clinicians working with individuals following brain injury, with an established link between impaired self-awareness and return to meaningful activities, including work and community integration. To appropriately target assessment and intervention for self-awareness, the theoretical foundation and definition of self-awareness beyond “awareness of deficits” must be considered.

Objectives: This aim of this qualitative systematic review is to establish the key concepts and conceptual boundaries for self-awareness in adults with acquired brain injury. The research questions addressed are: 1/ What are the theoretical models and frameworks of self-awareness in adults with acquired brain injury; and 2/ How is self-awareness conceptualised within those models?

Method: Search strategy included Medline, CINAHL, EMBASE, PsycINFO, Cochrane database searches, reference screening and expert recommendation. Papers were included if they provided models or frameworks for self-awareness for adults post-brain injury. Data analysis involved narrative synthesis to organise, comprehensively assess and synthesise the findings from included studies.

Results: From 7850 papers that were identified, a total of 33 papers were included in this review, which identified 12 models, 12 frameworks and 2 theories. The main themes included: clinical presentation of awareness (classifications and dimensions of awareness), development of awareness (knowledge, feedback mechanisms, temporal aspects, self-evaluation, enablers and barriers), understanding function and dysfunction, and practice guidance.

Conclusions: This review identified a broad range of information to support understanding of self-awareness, and forms a foundation to effectively develop assessment and treatment approaches for use in rehabilitation.

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Session 3

Performance on Cognitive Screening Following Endovascular Clot Retrieval and Intravenous Thrombolysis in Acute Ischaemic Stroke

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Background and Objectives: Endovascular clot retrieval (ECR) is a highly effective treatment in acute ischaemic stroke utilising an intra-arterial approach to remove clots and restore blood flow to the brain. While previous studies have largely focused on functional outcomes, little is known regarding cognitive outcomes following ECR. Indeed, further research is also needed to investigate cognitive outcomes following treatment with intravenous tissue plasminogen activator (t-PA), a thrombolytic agent used to dissolve clots. We aimed to determine if there are any differences on a measure of cognitive screening between patients treated with ECR, t-PA, and those who are managed conservatively (receive neither ECR nor t-PA).

Method: We retrospectively examined the charts of all patients admitted to the Stroke Ward at Monash Medical Centre between January and December 2019 for demographic information, diagnosis, stroke location, stroke severity, treatment type, and cognitive screening scores. Stroke severity was measured using the National Institutes of Health Stroke Scale (NIHSS). Cognitive function was evaluated using the Montreal Cognitive Assessment (MoCA).

Results: Ninety patients met inclusion criteria and had been administered the MoCA during their admission (mean age = 66.89 ± 14.52; 58 male, 32 female). The ECR group had significantly higher NIHSS scores at admission compared to the t-PA and conservative management groups. Nonetheless, patients who received ECR performed significantly better on the MoCA (24.18 ± 4.29, n = 34) compared to those who were managed conservatively (21.35 ± 4.96, n = 34). No significant differences were identified between the ECR group and the t-PA group (23.45 ± 4.19, n = 22), nor the t-PA and conservative management groups.

Conclusions: Our retrospective chart review found that treatment with ECR is associated with better performance on a measure of cognitive screening compared to conservative management in acute ischaemic stroke. While promising, prospective experimental research is needed to explore this finding further.

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Predictors of Cognitive Functioning in Presentations to a Community Based Specialist Addiction Neuropsychology Service

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Background and Objectives: Cognitive impairment is common in individuals presenting to alcohol or other drug (AOD) settings and the presence of biopsychosocial complexity and health inequities can complicate the experience of symptoms and access to treatment services. A challenge for neuropsychologists in these settings is to evaluate the likely individual contribution of these factors to cognition when providing an opinion regarding diagnoses such as Acquired Brain Injury (ABI). This study therefore aimed to identify predictors of cognitive functioning in AOD clients attending for neuropsychological assessment.

Method: Clinical data from 200 clients with significant AOD histories who attended for assessment between 2014 and 2018 were analysed and a series of multiple regressions were conducted to explore predictors of cognitive impairment including demographic, diagnostic, substance use, medication and mental health variables.
Results: Multivariable regression modelling identified significant predictors including age, gender, years of education, medication sedative load, emotional distress and diagnoses of ABI and neurodevelopmental developmental disorders as contributing to aspects of neuropsychological functioning including verbal intellectual functioning, F(5,165)=12.00, p<.0001, R^2=.26, nonverbal intellectual functioning, F(4,162)=5.42, p=.0004, R^2=.11, information processing speed, F(6,118)=4.35, p=.0005, R^2=.18, verbal recall, F(5,175)=4.00, p=.0019, R^2=.10, basic attention, F(3, 170)=5.54, p=.001, R^2=.09, complex attention, F(4, 121)=6.60, p=.0001, R^2=.18, and cognitive inhibition, F(5, 156)=3.44, p=.0056, R^2=.10.
Conclusions: These findings highlight the importance of careful provision of diagnoses in clients with AOD histories who have high levels of unmet clinical needs such as mental health co-morbidities. They demonstrate the interaction of premorbid and potentially modifiable comorbid factors such as emotional distress and prescription medication on cognition. Ensuring that modifiable risk factors for cognitive impairment are well managed may reduce experiences of cognitive impairment and improve diagnostic clarity within this clinical group.
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The Brief-Executive-function Assessment Tool: A new cognitive impairment screening tool for alcohol and other drug services

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Background and Objectives: Cognitive impairment is common in patients with substance use disorders (SUDs) and represent a significant barrier with respect to treatment engagement and risk for relapse. The aim of the current study was to examine the psychometric properties of the newly developed Brief Executive-function Assessment Tool (BEAT), which was specifically developed as a screening measure to detect cognitive impairment in an SUD population.
Method: The final sample included 501 individuals with SUD recruited from 10 residential treatment facilities, and 145 normal controls. Participants were administered a battery of inventory and performance based neuropsychological tests which included the BEAT. Results from the BEAT were compared across established neuropsychological measures to examine construct validity, and criterion validity. A subset of patients from the SUD (n = 137), and normal control (n = 40) groups underwent repeat testing to examine test-retest reliability.
Results: The BEAT demonstrated acceptable internal consistency (α = .734), excellent interrater reliability (r = .994), and good test-retest reliability (r = .845). Clinically acceptable levels of construct validity (all correlations with established measures $p \leq .05$) and criterion validity (ANCOVA $p < .001$) were observed. Test operating statistics (n = 500; 87% sensitivity, 71% specificity, 21% PPP, and 99% NPP) were also established relative to an independent criterion variable made up of three established performance-based tests of executive functioning.
Conclusions: The current results establish the BEAT as a reliable and valid screening tool for detecting cognitive impairment in an SUD population. As the first of its kind, the BEAT represents a significant step in improving SUD treatment outcomes by enabling clinicians to identify patients that require additional support to gain the most benefit from SUD treatment.
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Psychological and Cognitive Barriers to Diabetes-Related Foot Complication Treatment: Clinicians' Perspectives

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Background and Objectives: This study investigated clinicians' perspectives about cognitive functioning and mental health in individuals with diabetes-related foot complications (DRFCs), and how these impact upon the clinicians' treatment of the patient's conditions. Psychological and cognitive impairments may be more pronounced in individuals with DFRCs compared to the general diabetes mellitus population. Understanding these factors will identify potential barriers to DRFC treatment adherence and effective disease self-management.
Methods: Fourteen multidisciplinary clinicians (M_{age} = 37.86; *SD* = 9.26; range: 27-51) were recruited from a metropolitan hospital Diabetic Foot Unit. Semi-structured interviews were

conducted with each clinician, followed by the completion of a brief quantitative questionnaire. Interview data were analysed thematically.

Results: Six themes that encompassed factors impacting on DRFC treatment were identified: (1) Psychological and cognitive characteristics; (2) The person in the environment; (3) Illness and self-identity; (4) Burden of chronic disease; (5) Engaging with treatment; and (6) The clinician and health system response. Quantitative questionnaire results coincided with qualitative findings, with endorsement of global psychological and cognitive impairment in individuals with DRFC, which considerably affected their ability to engage in treatment.

Conclusions: From the perspectives of clinicians working with patients with DRFCs, psychological, cognitive and social factors have a considerable influence on DRFC treatment and self-management. Further investigation of these factors and their interrelationships is necessary to enhance treatment adherence in individuals with DRFCs.

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Psychological and Cognitive Barriers to Diabetes-Related Foot Complication Treatment: Clinicians' Perspectives

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Conclusions: From the perspectives of clinicians working with patients with DRFCs, psychological, cognitive and social factors have a considerable influence on DRFC treatment and self-management. Further investigation of these factors and their interrelationships is necessary to enhance treatment adherence in individuals with DRFCs.

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Interictal cognitive deficits in migraine sufferers: A meta-analysis

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Background and Objectives: Despite a significant proportion of people suffering from migraine, the existing research literature does not provide a clear indication whether migraineurs experience objective cognitive deficits outside of acute migraine attacks. This meta-analysis was conducted to investigate which cognitive domains if any were affected by migraine, by synthesising the existing research quantitatively.

Method: This meta-analysis was prospectively registered with the PROSPERO International prospective register of systematic reviews (registration no.: CRD42019134138). A search of the electronic databases PubMed, Ovid MEDLINE, and PsycINFO was conducted for journal articles published between January 1980 and January 2020. Seventeen studies met the inclusion criteria, allowing for the calculation of pooled effect sizes between migraineurs (with and without aura) and healthy controls in the several cognitive domains.

Results: During the interictal period, migraineurs demonstrated a moderate, negative effect on complex attention immediate and delayed memory, spatial cognition, and executive functioning. This effect was not attributable to migraine history, attack frequency, or participant age.

Conclusions: A lack of performance validity testing, and limited data on mood symptomatology and migraine medication use in the included studies may be confounding results of the current meta-analysis and potentially overestimating the magnitude of effect. Therefore, recommendations for comprehensive future neuropsychological research are provided.

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How to Session

Functional Neurological Disorders: strategies for assessment and feedback

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Synopsis of session: Functional Neurological Disorders (FND) are a complex group of conditions that are increasingly recognised within out healthcare settings, yet remain poorly understood. Interest in FND has grown with the inclusion in DSM-5 and new research findings and consensus guidelines. This group of disorders are disabling and often are associated with poor long term outcomes. Individuals with FND often experience stigma associated with their condition. There is a marked difference in the ways in which diagnosis, assessment and treatment are approached within healthcare settings and often patients may not be able to receive timely specialised care and intervention. This session will discuss some of the models and evidence underlying a diagnosis of FND and discuss suggested strategies for delivering a diagnosis. The role of neuropsychology in assessment of FND will be canvassed along with case examples to illustrate approached to assessment. The role of psychoeducation in feedback will be discussed as well as common challenges and barriers in working with these individuals and their families. Example feedback strategies will be provided as well as reference materials for use with clients.

Level aimed for: Basic to Experienced
Learning objectives:

1. Develop an understanding of the current research evidence regarding functional neurological disorders (FND)
2. Develop an understanding of assessment approaches, including history taking
3. Develop an understanding of models of feedback and explanatory illness models
4. Develop an understanding of challenges of working with this population

Biography: Simone completed her postgraduate training in Clinical Neuropsychology at The University of Melbourne. She has worked clinically for over ten years in a variety of settings, including sub-acute, acute and community based settings. Areas of speciality include neuropsychiatry and movement disorders. Simone is a member of the Functional Neurological Disorders Society and has spoken on this topic at local and international meetings, drawing on her extensive clinical experience in this area.

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Session 4

The Neuropsychology of COVID-19: International perspectives and implications for clinical practice

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Synopsis of Session The emerging understanding of the neuropsychological symptoms and sequelae of COVID-19 has significant implications for researchers and health care practitioners globally. This session will cover current global efforts towards addressing these issues.

Firstly, we will review the neuropsychological, neurological, and neuropsychiatric symptoms and sequelae of COVID-19 infection, followed by an overview of the recommendations for research of the NeuroCOVID-19 Special Interest Group (SIG), presented at the February 2021 International Neuropsychological Society conference. We will share perspectives of the impact of the neuropsychological symptoms post-COVID-19 in various parts of the world. Finally, we will offer practical guidance to assist clinicians in adapting their clinical practice in light of COVID-19. This will include considerations for history taking processes, selection of neurocognitive and neuropsychiatric assessment instruments, and implementation of rehabilitation efforts.

Level aimed for: Basic, Intermediate
Learning objectives:

- Understanding of current literature regarding neurological, neuropsychiatric and neuropsychological sequelae of COVID-19
- Awareness of the recommendations of the NeuroCOVID-19 SIG, and the implications for research and clinical assessment in adults with COVID-19
- Understanding of the international perspective of neuropsychological symptoms post-COVID-19 across regions and countries
- Awareness of factors relevant to completing a medical history interview with consideration to COVID-19
- Knowledge of core features to consider when assessing individuals who have had COVID-19 infection
- Understanding of the clinical implications for rehabilitation

Biographies

Dr Clare Ramsden is a Clinical Neuropsychologist and Deputy Director of Allied Health at the Tasmanian Health Service, Hospitals South. She has worked in clinical roles in acquired brain injury and rehabilitation services and has held senior leadership and executive roles in the United Kingdom, New Zealand and Australia, across health, hospital, mental health and brain injury rehabilitation services. Clare has clinical and service development interests in acquired brain injury, functional disorders and neuropsychology in acute settings, alongside interests in workforce planning, employee wellbeing and leadership development.

Dr Lucette Cysique is a neuropsychologist, who has led a research program in NeuroHIV, neuropsychology and neuroimaging at UNSW Sydney, Australia since 2009. She conducts cross-disciplinary research into the neurocognitive and brain changes associated with HIV and aging, HIV and cardiovascular diseases, and HIV and mental health. She has extensive experience in cross-cultural neuropsychology as applied to HIV infection and contributes to the development of normative neuropsychological data for cross-sectional and longitudinal studies. Dr. Cysique is currently employed as a Senior Research Fellow at UNSW Psychology via a visiting scholar support from St. Michael's Hospital (University of Toronto affiliated Hospital, Ontario, Canada), support from the Sydney St. Vincent's Hospital Applied Medical Research Centre in the Applied Neuroscience Unit, as well as support from the Melbourne Alfred Hospital. She is co-chair of the NeuroCOVID-19 International Neuropsychological Society (INS) Special Interest Group. She leads the neuropsychology research for the ADAPT COVID-19 study ay Sydney St. Vincent's Hospital.

Prof Emilia Łojek is a professor, academic teacher and researcher at the Department of Clinical Neuropsychology and Psychotherapy, Faculty of Psychology, Warsaw University, Poland. She is the author or co-author of many books, chapters and papers in Polish and English on clinical neuropsychology, including language and communication disorders in people with brain dysfunctions, neuropsychological changes in neurodegenerative diseases, mental disorders and aging, diagnosis problems and rehabilitation of people with brain dysfunctions. She develops research on neuropsychological functions and aging in HIV-infected population. She is the author or co-author of the Polish adaptations of standardized techniques for neuropsychological measurement and is the co-editor of the Clinical Neuropsychologist special issue (2019): Are modern neuropsychological assessment methods really "modern"? She has received national awards for her scientific achievements (Copernicus Price 2011, 2017) and the INS Paul Satz Mentoring Award (2018). Currently, she leads the NeuroCovid research team at the Faculty of Psychology of the University of Warsaw, which carries out nationwide research on the neuropsychological consequences of COVID-19. She is also the co-chair of the INS NeuroCovid SIG.

Dr Christian Salas is a Chilean clinical neuropsychologist. He is a Lecturer and Researcher at the Centre for Human Neuroscience and Neuropsychology (Diego Portales University, Chile) and the Director of the Diploma in Adult Neuropsychological Rehabilitation and the Clinical Neuropsychology Unit. He is also the president of the Chilean Society of Clinical Neuropsychology. Dr. Salas' main clinical and research interests are related to understanding emotional/personality changes after brain injury and the relationship between cognitive/emotional changes and social isolation. He has published over 30 articles and chapters related to these topics. He is co-author of the book Addressing Brain Injury in Under Resourced Settings (Routledge, 2017) and editor of Clinical Studies in Neuropsychoanalysis Revisited (Taylor & Francis, in press). Publications: https://www.researchgate.net/profile/Christian_Salas

A/Prof Tracy D. Vannorsdall, is a board-certified clinical neuropsychologist and Assistant Professor within the Department of Psychiatry and Behavioral Sciences and the Department of Neurology at the Johns Hopkins University School of Medicine. She is Director of Clinical Training for the Division of Medical Psychology postdoctoral residency and predoctoral externship programs. Her research has largely focused on identifying, preventing, and treating cancer-related cognitive impairment and other disease- and treatment-related side effects. More recently she has directed her efforts towards the study and treatment of neuropsychological dysfunction associated with COVID-19 infection. She is a member of the Johns Hopkins Post-acute COVID-19 Team (JH-PACT), which provides multidisciplinary clinical care to COVID-19 survivors while establishing a framework for the collection of structured data that will inform understanding of the natural history of COVID-19.

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Behavioural and psychological effects of the COVID-19 pandemic on people living with dementia and their carers: an international study

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Background and Objectives: As a global health emergency, the rapid spread of the novel coronavirus disease (COVID-19) led to the implementation of unprecedented restrictions (e.g., quarantine, physical/social distancing). However, while these restrictions reduce the viral spread of COVID-19, they may exacerbate behavioural and cognitive symptoms in dementia patients and increase pressure on caregiving. Here, we aimed to assess the impact of COVID-19 and related restrictions on both carers and people living with dementia across the world.

Method: We conducted an international survey (Australia, Germany, Spain, and the Netherlands) to assess the impact of COVID-19 on carers and people living with dementia (n=287).

Results: Carers reported a worsening of neuropsychiatric symptoms in people with dementia, including depression, apathy, delusions, anxiety, irritability and agitation, since the outbreak of COVID-19. Regression analyses revealed that limited understanding of the COVID-19 situation was associated with worsened neuropsychiatric symptoms in people with dementia. Carers also reported a decline in their own mental health, increased stress and reduced social networks as a result of COVID-19 and related restrictions. Regression analyses revealed uncertainty about the future and loneliness were associated with worsened carer mental health.

Conclusions: Findings from this study will inform strategies for the development of relevant support services that meet the evolving needs of those living with dementia and their carers.

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Neuropsychology adaptations during COVID-19: A UQ Neuropsychology Research Clinic method

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Background and Objectives: Social distancing, face-to-face time restrictions and mask requirements are some of the key factors neuropsychologists have navigated to stay operational during the COVID-19 pandemic. We discuss how we successfully overcame these at the University of Queensland Neuropsychology Research Clinic (UQNRC) by moving all neuropsychological testing to a *within-clinic* model of teleneuropsychology to meet institute and government parameters.

Method: Healthy middle-aged participants (N = 90) and patients with Alzheimer's disease, mild cognitive impairment or other dementias (N = 18) attended the UQNRC with the participant and neuropsychologist situated in two adjacent rooms. Most tasks were administered via video-link using a combination of the Zoom screen share function and document camera, with external microphones used to enhance sound. Face-to-face time was minimised, with 1.5 metres distance maintained and a clear screen between. Healthy participants completed a face-to-face assessment two years previously, with 20 completing reassessment face-to-face before COVID-19 lockdowns and 70 completing reassessment via video-link. Results were compared across time points and delivery modality. A 7-item participant experience survey was created for anonymous feedback.

Results: To date, there have been no instances of audio, screen or internet failure. There were no significant differences in scores at reassessment between healthy participants completing neuropsychology face-to-face compared to video-link on key neuropsychology tasks (nonverbal fluid intelligence, verbal and visual memory, language, working memory, verbal initiation). Subjectively, patients with mild to moderate dementia coped well, however participants with very severe dementia or severe visual deficits had more difficulty completing nonverbal tasks over video-link. Results of the survey indicated that participants felt comfortable (100% agreed), established good rapport (~95% agreed) and experienced good to excellent sound and vision (~95% agreed).

Conclusions: This method of teleneuropsychology can be used successfully to obtain high quality and reliable results. An advantage is patients with cognitive difficulties are not required to trouble-shoot technical problems. Space to test over two rooms is a limitation clinics may face.

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Administering the WAIS-IV using a novel home-based telehealth videoconferencing approach

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Background and Aims: Neuropsychological services have rallied to adapt clinical practice to the necessary constraints of the global COVID-19 crisis. The bulk of clinical services, largely based on verbal interaction between the client and service provider, moved to a distance service delivery model, largely relying on

online teleconferencing technology to maintain personal contact with consumers (clients). However, the situation is more challenging for neuropsychological assessments that have standardized administration procedures that typically require in-person contact. To date no research has examined reliability of home-based assessment models using a comprehensive battery, which generates an overall cognitive composite score. The aim of this study was to examine the reliability of a novel home-based videoconferencing administration of the Weschler Adult Intelligence Scales-4th Edition.
Method: Thirty healthy adult participants (aged 18 to 40 years) completed the WAIS-IV both in person and via home-based videoconferencing utilising a randomised counter-balanced methodology. Paper record forms for Coding/Symbol Search and a set of blocks were sent via tamper proof courier packs.
Results: Data from both methods of administration were highly correlated across all WAIS-IV sub-tests and indices, with all ICC's rated as "excellent," and there were no significant mean group differences. The majority of participants were very satisfied with the use of videoconferencing as an application for cognitive assessment and all participants were compliant with returning the test materials via courier**.**
Conclusions: In this non-clinical cohort videoconference administration of the WAIS-IV was reliable and acceptable. Videoconferencing may offer an alternative for those consumers who are unable to access a face-to-face service delivery model, thereby improving equity and enabling continuation of service delivery.
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Session 5 Symposium

Perspective of the carer and person with brain injury: Changes to everyday life affecting one's self

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Background and aims: People with brain injury experience alterations to everyday life including work, leisure, and social activities, which impact on their sense of self, life roles, and participation. This presentation will identify and explore changes in sense of self after brain injury from the perspective of individuals with brain injury and family members.
Method: Using a patient-partnered approach, this talk will describe the multi-faceted nature of the experience of one's self after brain injury. Stories from people with brain injury and families who supported them will be shared.
Results: Experiences of one's self after brain injury are complex, dynamic, and individualised, which can relate to both personal and social factors. Personal factors such as impairments sustained from the injury can be associated with the experience of changes to one's self. Social factors including alterations within one's roles and relationships can also be connected with sense of self changes after brain injury.
Conclusions: People with brain injury can experience ongoing changes in their sense of self. Personal and socially derived supports can help facilitate positive reconstruction of self and improve subjective quality of life.
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Dynamic Comprehensive Model of Awareness (DCMA), awareness intervention using a metacognitive strategy framework

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Background and aims: The Dynamic Comprehensive model of awareness proposes a multicomponent model of awareness that highlights the distinction between general awareness or self-knowledge and beliefs about one's abilities that exist outside the context of an activity and online awareness or that which is activated within the context of an activity. It provides a foundation for theory driven interventions that use a metacognitive strategy approach to promote awareness of one's performance. An example of an intervention study based on this model is provided. Our aim was to provide evidence of feasibility, acceptability and preliminary effectiveness of a metacognitive strategy framework within the context of routine inpatient rehabilitation care.
Method: We conducted a single case series in 8 adults with ABI in an acute inpatient rehabilitation setting. A consistent metacognitive strategy framework within the context of relevant functional activities was integrated into usual and ordinary care. Guided questions that focused on building anticipation, generation of strategies, error management and self-assessment were used during each treatment session. In addition to functional cognitive assessment, awareness was measured using the Self-Regulation Skills Interview (SRSI).
Results: High client satisfaction, enjoyment and perceived benefits were observed despite the fact that all participants initially identified physical goals only. Significant pre-post changes in awareness, strategy use and functional performance were found.
Conclusion: A theory driven metacognitive strategy framework that focuses on improving self-monitoring, self-regulation and management of functional cognitive performance is feasible within acute

inpatient rehabilitation routine care and appears to have potential for promoting online awareness in a non-threatening manner, in the early stages of recovery.
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The Impact of Personal Protective Factors on Resiliency after Traumatic Brain Injury

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Introduction/Rationale: Recent research in traumatic brain injury (TBI) has focused on the importance of adaptation rather than adversity. The TBI Resiliency Model outlines factors and processes that may contribute to resiliency. This study examines the influence of personal protective factors on resiliency as measured by quality of life (QoL) in persons with TBI.
Objectives: To examine the association between cognitive (i.e. self-awareness, memory, and processing speed) and behavioral protective factors (i.e. depression, socialization, self-efficacy), on QOL in patients with TBI.
Method/Approach: This cross-sectional study included a sample of 38 adults living in the community at least one year after sustaining a moderate to severe TBI. Participants completed cognitive tests to assess memory, processing speed and self-awareness, and questionnaires to assess self-Efficacy and depression. QOL was assessed by the Health Status Questionnaire SF-12.
Results and Practical Implications: Higher rated social and general self-efficacy and faster processing speed correlated with a higher QoL. Lower self-awareness and higher ratings of depression correlated to lower QoL ratings. By examining the contributions of each individual factor in a linear regression, depression, processing speed, and general self-efficacy were significant in predicting QoL ratings.
Conclusion: This study builds upon the TBI Resiliency Model. With the exception of memory, findings support this conceptual model on the personal factors that foster resiliency. Rehabilitation focused on self-efficacy, executive functioning, and mood may enhance resiliency and improve long term outcomes.
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Facial Affect Recognition, Self-awareness, and Social Communication Skills after Traumatic Brain Injury

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Background and aims: Early efforts at post-acute rehabilitation of persons with traumatic brain injury (TBI) revealed that resolving self-identity issues was a key goal of treatment. Previous investigations have shown that ability to interpret another person's facial expression is often impaired by TBI. Further, persons with TBI may have impaired awareness of their functioning in social interactions. Social communication ability is a key aspect of self-identity that influences social relationships as well as participation in productive activities. The present investigation examined the associations of facial affect recognition and self-awareness with social communication abilities in persons with TBI.
Method: Participants were persons with medically documented TBI. To be included for study, consenting participants had to identify an informant who interacted with the participant frequently and who also consented to the study. Facial affect recognition ability was measured with the Florida Affect Battery. Impaired self-awareness was measured with the Awareness Questionnaire. Social communication ability was assessed using informant ratings on the LaTrobe Communication Questionnaire.
Results: 77 dyads of persons with TBI and informants were enrolled. Mean age of participants with TBI was 35.0 years ± 12.4 while mean years of education was 12.8 ± 2.0. 50 participants were male. 50 participants sustained severe TBI while 4 sustained moderate injuries and 8 complicated mild injuries. Mean years post-injury was 4.9 ± 5.3. Structural equation modelling revealed that facial affect recognition, but not self-awareness was associated with social communication ability. The effect of facial affect recognition was neither mediated nor moderated by self-awareness. Findings may have been limited by a ceiling effort for the facial affect recognition measure.
Conclusion: Findings confirm the importance of facial affect recognition for effective social communication. Interventions to improve facial affect recognition may improve social communication and sense of self for persons with TBI.
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Models of self-identity and intervention approaches

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Background and aims: Brain injury can alter the unique and persisting qualities that underlie one's sense of self. The concept "loss of self" has been used to characterise this experience; however, research indicates that reconstruction of self after brain injury is a multi-faceted and ongoing process.
Method: Drawing on theories derived from psychology, sociology and cognitive neuroscience, this talk will provide a theoretical account of changes to self-identity in the context of brain injury and interventions approaches for targeting sense of self.
Results: Changes to self-identity after brain injury reflect a complex interplay of neurocognitive and psychosocial factors. This includes damage to neural

systems supporting sense of self and related functional impairments, and loss of meaningful activities, life roles and social participation. A systematic review identified that few interventions have been found to improve global self-esteem or self-concept. A key consideration for rehabilitation is *specificity* or level of intervention approach, as these vary from targeting global self-representations, domain-relevant self-concepts or situation-specific self-perceptions.
Conclusions: Changes to self-identity after brain injury are best managed through interdisciplinary and multi-level intervention approaches. Theory-guided approaches for supporting individuals to re-establish a positive identity will be presented.
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Integrating self-awareness assessment and intervention into service delivery: Challenges and considerations

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Background and aims: Translation of clinical practice guidelines for self-awareness assessment and intervention into the clinical context can pose some challenges for clinicians across various clinical settings. Interdisciplinary team knowledge of relevant clinical practice guidelines and associated assessment and intervention approaches is key in building capacity in this important area of practice. **Method:** Barriers and enablers to translation of clinical practice guidelines for self-awareness assessment and intervention will be discussed. This presentation will provide recommendations for embedding self-awareness practice standards into clinical practice.
Results: Development of interdisciplinary team knowledge, skill and confidence in administering self-awareness assessments and implementing intervention approaches is essential to promote integration of best practice standards in service delivery. Access to key assessments with established psychometric properties for this population is an important starting point for clinical teams.
Conclusions: Embedding best practice standards for self-awareness into the clinical context requires an interdisciplinary team understanding of the importance of addressing impaired self-awareness to achieve best rehabilitation outcomes, along with commitment from the team to meet these standards. Establishing ongoing opportunities for staff training and education is an important factor to promote sustainable practices in this area.
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Session 6

White matter microstructure in paediatric chronic fatigue syndrome and its relationship with cognition and fatigue

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Background and Objectives: Cognitive dysfunction and fatigue are commonly reported in Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS). In adults, evidence suggests disturbances in the integrity of brain white matter structure may underlie these core ME/CFS symptoms, and may represent a potential biomarker of disease. However, this has yet to be investigated in the paediatric population. This study examined the integrity of brain white matter in adolescents recently diagnosed with ME/CFS compared with healthy adolescent controls, and its relationship with cognitive function and fatigue.
Method: 48 adolescents (25 ME/CFS, 23 healthy controls, mean age = 16±1.6 years) underwent a diffusion MRI brain scan to evaluate group differences in macrostructural properties (regional brain volume, cortical thickness, white and grey matter volume) and microstructural white matter indices (fractional anisotropy and mean/axial/radial diffusivity, neurite dispersion and density, fibre density and fibre cross-section). Cognitive function and levels of self-reported fatigue were also evaluated.
Results: ME/CFS adolescents reported higher fatigue levels and showed poorer performance on cognitive measures of processing speed, sustained attention and new learning compared with their healthy peers (all $p<0.02$, $\beta>0.60$). Following correction for multiple comparisons and adjustment for age and sex, no significant group differences were observed in macrostructural or microstructural white matter properties in the brain, with one exception; the ME/CFS group showed greater white matter fibre cross-section of the left inferior longitudinal fasciculus (ILF) compared with controls ($b=-0.12$, 95%CI: -0.17, -0.07, $p=<0.001$, $\beta=-0.56$). This finding was not associated with cognitive function or fatigue.

Conclusion: The isolated finding of greater fibre cross-section in the paediatric ME/CFS group compared with controls may indicate abnormal fibre arrangement or morphological changes within the left ILF. However, this was unrelated to ME/CFS symptoms, and other brain structural properties were similar between both adolescent groups. The discrepancy between our findings and the adult ME/CFS literature may suggest that older age and illness duration influence changes in brain structure and brain-behaviour relationships that are not yet established earlier in development.

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Neuropsychological Profiles of Western Australian Children with Cerebral Palsy

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Background and Objectives: Cerebral Palsy (CP) is a physical disability affecting movement and posture, caused by damage to the immature brain. CP can affect perception, cognition, attention, and executive functioning. Significant variability in cognitive function in children with CP has been reported globally, with the prevalence of intellectual disability (ID) estimated around 50% across Gross Motor Function Classification Scales (GMFCS).

Aim: To review and describe neuropsychological data for a clinical sample of all referrals for children with CP from a mobility service within Kid's Rehab WA over the last 7 years, and compare it with published literature of similar cohorts.

Method: A retrospective audit of neuropsychological data for 96 children, referred from the mobility clinic between 2013-2020. The sample consisted of 57 males (59%) and 39 females (41%), with a mean age of 115.94 months (SD=4.42) ranging from 57 to 218 months.

Assessments included the Wechsler Intelligence Scale for Children IV and V (WISC-IV, WISC-V), Sleep Disorders Scale for Children (SDSC), Delis Kaplan Executive Function Scale (DKEFS), and the Test of Everyday Attention – Children (Tea-Ch), and where available brain MRI and ophthalmological assessments.

Results: Ex-premature infants accounted for 60% of the sample, compared to 43% reported by the Australian Cerebral Palsy Register (ACPR). GMFCS level was skewed toward level I and II at 71% combined, in comparison to 62% reported by the ACPR.

Results of a descriptive analysis revealed a clinically significant negative relationship in IQ when FSIQ scores were stratified by GMFCS level. Children with GMFCS level I demonstrated better FSIQ on the WISC-IV than those with GMFCS level II (m=76.64, m=60.4, m_{A-B} = 16.24). A high rate of ID (40%) was seen, consistent with levels of intellect impairment for WA as reported by the ACPR (41.7%), and a decremental relationship between motor function and IQ was observed.

Neurocognitive profiles across the individual subtests of the WISC and other measures of cognition, sleep, brain MRI, and ophthalmological data were also examined.

Conclusion: Diagnosis of CP as a motor disorder occurs in infancy and early childhood, however the diagnosis of ID often occurs after school commencement, if at all. This study has clinical implications for those who work with children with CP, as there is a critical unmet need to provide a screening service to address neurocognitive problems in children with CP.

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The long-term social skill outcomes of young children with traumatic brain injury: What predicts outcome?

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Background and Objectives: At present, little is known about the long-term impact of a traumatic brain injury (TBI) on social skills in children injured in early childhood. Therefore, the purpose of this longitudinal study was to understand the impact of a TBI before 3 years of age in these children.

Method: The study (n=39) included children with mild TBI, moderate-severe TBI and a comparison group of uninjured control children matched for age, sex and socioeconomic status. Children who meet the inclusion criteria were recruited through a hospital emergency department. Assessments were conducted at 3 years (Time 1) and 7 years (Time 2) after TBI. A high retention rate (>85%) was maintained. Child-based assessments of attention and social cognition were administered. Information on social and executive function were also collected from parents.

Results: At Time 2, 7 years post-injury, children with a moderate-severe TBI had lower scores on the parent-rated social skills but not on child-based social cognitive measures. Children with a moderate-severe TBI had more difficulties identified on the executive

function measure. The performance on the parent-rated social skills questionnaire was predicted by their attentional ability measured at Time 1 (3 years after TBI). Social difficulties identified by the parents were skills that closely align to attention and executive skills. Children with mild TBI performed similarly to the comparison group on all measures.
Conclusions: Underlying social problems seen after a TBI in early childhood are executive and attention difficulties such as regulation of emotions and behaviour. The findings provide valuable information on the social outcomes of children with a TBI prior to 3 years of age.
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Family interventions in the rehabilitation of paediatric acquired brain injury: A scoping review

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Background and Objectives: Paediatric acquired brain injury (ABI) can adversely impact families, and family functioning can reciprocally impact children's/adolescents' recovery. While family-centred care is considered best practice in paediatric healthcare, there is limited guidance about how to best meet families' needs in paediatric ABI rehabilitation, despite a clear need for family support. Several interventions have been developed to address the needs of families who have a child/adolescent with an ABI, but there are no published reviews outlining the characteristics of these interventions. The purpose of this scoping review was to synthesise published information about interventions in paediatric ABI rehabilitation that involve families, and to develop an understanding of how families are involved in them.
Method: A scoping review was conducted according to the methods outlined by Arksey and O'Malley (2005). Four databases were systematically searched to capture descriptions of interventions in paediatric ABI rehabilitation that involve family members. The interventions were grouped according to King, Williams and Goldberg's (2017) family-oriented services framework.
Results: Seventy-nine articles describing 34 interventions were included. Interventions were categorised as: service coordination (*n*=10), psychosocial (*n*=13), training/instruction (*n*=7), support groups (*n*=2), education (*n*=1), and other (*n*=1). Interventions varied in their eligibility criteria, timing, and mode of delivery. Interventions targeted the outcomes of children/adolescents with ABI and/or their family members, and families' involvement varied. While some interventions involved only parents/caregivers, others involved the entire family unit. Most interventions could be tailored to address families' specific needs.
Conclusions: This scoping review can be used to guide service decisions on how to better meet families' needs in paediatric ABI rehabilitation. While this review outlines a range of approaches to supporting families, it highlights the need for models of family-centred care to better articulate how clinicians and services can better meet the needs of both children/adolescents with ABI and their families.
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No difference in resting state network activity between children with normal and delayed recovery from concussion

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Background and Objectives: Resting state functional magnetic resonance imaging (rs-fMRI) has been highlighted as a novel neuroimaging modality which may have predictive utility in identifying children with concussion compared to controls. Of greater clinical utility, however, would be the ability to predict whether children who have sustained a concussion will recover normally or have a delayed recovery course. This study aimed to investigate the differences in resting state network activation between children who recover from concussion normally, and those who are delayed in their recovery.
Method: Forty-one children who presented to the emergency department of a tertiary level paediatric hospital with concussion, as defined by the Berlin

consensus statement, participated in this study as a part of a larger prospective, longitudinal observational cohort study into concussion assessment and recovery. Children underwent neuroimaging at two weeks post injury and were classified as either normally recovering (*n*=27), or delayed recovering (*n*=14) at 2 weeks based on ratings from the child report version of the Post Concussive Symptom Inventory. A dual regression analysis was carried out to assess for group level differences in the resting state networks.
Results: No evidence for group level differences in resting state network activity were uncovered when comparing the normal recovery and delayed recovery groups after correction for multiple comparisons.
Conclusions: These findings suggest that, given current technological capabilities, rs-fMRI is unlikely to be able to differentiate between children recovering normally from a concussion and children who are likely to have a delayed recovery trajectory.
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No multivariate difference in cognitive recovery between children with normal and delayed recovery from concussion: a longitudinal study

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Background and Objectives: Delayed recovery from concussion in children occurs in roughly one third of children who sustain a concussion. The question as to why some children take longer to recover however remains. This study aimed to identify if children with delayed recovery showed a slower rate of cognitive recovery compared to normally recovering children, across neuropsychological measures of processing speed, working memory, attention, and concentration.
Method: Fifty-one children who presented to the emergency department of a tertiary level paediatric hospital with concussion, defined in accordance with the Berlin consensus statement, participated in this study as a part of a larger prospective, longitudinal observational cohort study into concussion assessment and recovery. Children were classified as either normally recovering (*n*=26), or delayed recovering (*n*=25) using the parent report version of the Post Concussive Symptom Inventory at two weeks post injury. Cognitive testing was conducted at the same two-week timepoint, as well as at a three-month timepoint. A multivariate analysis of variance was used to assess the difference in recovery rate between normally recovering children, and children with delayed recovery.
Results: No evidence for a multivariate interaction between Group, Time, and Cognitive Test was found. No Time by Group interaction was found for any of the cognitive tests. A significant main effect of time was found, for all cognitive tests with a timed element, but not on a test of working memory. No evidence for a significant main effect of group was found.
Conclusions: These findings suggest that the rate of recovery from concussion is not different for children with normal recovery from concussion and children with delayed recovery from concussion. This indicates that children with delayed recovery are either recovering from a greater amount of initial injury symptom load, or are developing new symptoms during the recovery process. The significant main effect of time indicates that these cognitive tests are sensitive to cognitive recovery post-concussion.
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The development of a theory informed, behaviour change intervention to improve goal setting for children with paediatric acquired brain injury and their families during rehabilitation

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Background: While goal setting with children and their families is considered best practice during rehabilitation following acquired brain injury (ABI), it's successful implementation in an interdisciplinary team is not straightforward. This paper describes the novel application of a theoretical framework to understand factors influencing goal setting with children and their families in a large interdisciplinary rehabilitation team to inform the content and delivery of an intervention to optimise the implementation of goal setting.
Methods: The Behaviour Change Wheel (BCW), incorporating the COM-B model (Capability, Opportunity and Motivation for behavioural interventions), was used to guide intervention

development. Factors influencing collaborative goal setting were identified from a focus group of rehabilitation clinicians and those with lived experience of paediatric ABI. A comprehensive behavioural diagnosis of these factors was conducted through application of the theoretical domains framework (TDF). Using these data, the most appropriate intervention functions for inclusion in the intervention were identified. Decision making was guided by evaluation criteria recommended by BCW with guidance and feedback by rehabilitation clinicians and those with lived experience of paediatric ABI.
Results: A total of 11 participants (9 paediatric rehabilitation clinicians, 2 with lived experience of paediatric ABI) participated in the focus group. Factors influencing collaborative goal setting were mapped to Capability (Skills, Knowledge, Beliefs about Capabilities, Behavioural Regulation), Opportunity (Environmental Context and Resources,) and Motivation (Social/Professional Role and Identity). Five potential intervention functions were identified: Training, Environmental Restructuring, Enablement, Education, and Modelling.
Conclusion: The use of the BCW and COM-B has enabled the development of a theory- and evidence-informed, targeted behaviour change intervention to improve goal setting for children with ABI in a large interdisciplinary rehabilitation service. The transparent and systematic approach taken can be used to guide intervention development for improving evidence-informed care in other aspects of paediatric rehabilitation.
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Environment enrichment versus social grouping has differential effects on long-term behavioral deficits in a mouse model of pediatric traumatic brain injury

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Background and Objectives: Impairments in social and cognitive function are common and often debilitating issues for survivors of traumatic brain injury (TBI) during childhood. Rehabilitation strategies may create a post-injury setting that is supportive of behavioral recovery; however, such interventions have rarely been systematically evaluated for efficacy. Here, we asked whether the social environment is sufficient to modulate long-term social and cognitive outcomes in young mice after experimental TBI. This was compared to a typical environmental enrichment (EE) paradigm, which incorporates sensory, motor and cognitive stimuli.
Method: Male C57Bl/6J mice received a moderately-severe controlled cortical impact or sham surgery at postnatal day 21. After one week, mice were randomized to different social conditions (minimal socialization, n=2/cage; or social grouping, n=6/cage), and different housing conditions (standard cage, or EE). Objects in EE cages were rotated or changed twice-weekly to ensure novelty. After 8 weeks, all mice underwent an extensive series of behavioral tests to assess outcomes (open field, elevated plus maze, social interactions, scent marking, three-chamber social approach, rotarod, Y-maze, and Morris Water Maze).
Results: From preliminary analysis (n=5-9/group), TBI mice exhibited hyperactivity, spatial memory deficits, reduced anxiety-like behavior, and reduced sensorimotor performance compared to age-matched sham controls. In addition, TBI mice show reduced social and sociosexual behaviors. Typical EE appears to alter anxiety-like behavior in TBI mice, increase sensorimotor performance in both TBI and sham animals, and increase the duration of reciprocal social interactions. Social grouping appears to reduce hyperactivity and alter anxiety-like behavior in TBI mice, but has little effect on social behavior tests. Surprisingly, cognitive outcomes were not influenced by either EE or social grouping.
Conclusions: Findings indicate that manipulation of the post-injury environment can yield beneficial effects on chronic behavioral outcomes, which may be specific to the type of enrichment available (social or otherwise). Ongoing studies will validate these findings and explore the underlying neurobiological mechanisms. Ultimately, this study will improve our understanding of modifiable factors that may be harnessed to promote optimal long-term outcomes for survivors of early life TBI.
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Session 7

Differential associations of modifiable and non-modifiable dementia risk factors with memory decline and hippocampal volume loss in Aβ- and Aβ+ cognitively normal older adults

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Background and Objectives: We sought to determine the association of modifiable and non-modifiable components included in the Cardiovascular Risk Factors, Aging, and Incidence of Dementia (CAIDE) score with memory decline and brain volume loss in cognitively normal (CN) older adults, taking β-amyloid (Aβ) status into account.

Method: AIBL study participants (age range: 60-90) who completed ≥2 neuropsychological assessments and an Aβ PET scan (N=575) were included in this study. We computed the standard CAIDE (age, sex, APOE ε4 status, education, hypertension, body mass index, hypercholesterinemia, physical inactivity), and a modifiable CAIDE (modCAIDE; education, modifiable vascular risk factors) for each participant. Aβ+ was classified using a Centiloid ≥25. Linear mixed models assessed interactions between each CAIDE score on episodic memory (EM) and hippocampal volume (HV) over time in Aβ- and Aβ+ CNs. Non-modifiable variables from the standard CAIDE (age, sex, ε4) were included as separate predictors in all modCAIDE models to assess differential associations.

Results: We observed a significant standard CAIDE x time interaction on EM decline in Aβ+ (β=-0.08(0.04); p=0.02) and Aβ- participants (β=-4.07(1.13); p<0.001), and a significant standard CAIDE x time interaction on HV loss in Aβ+ participants only (β=-0.06(0.02); p=0.003). When modifiable and non-modifiable CAIDE components were considered separately, we observed a significant ε4 x time interaction only for EM decline (β=-0.32(0.07); p<0.001) and HV loss (β=-0.13(0.04); p<0.001) in Aβ+ participants, but no significant modCAIDE x time interaction (both p's>0.29). In Aβ- participants, we observed a significant modCAIDE x time interaction on memory decline (β=-0.04(0.02); p=0.02), but no significant ε4 x time interaction (β=-0.07(0.04); p=0.11). No significant ε4 x time or modCAIDE x time interactions were observed for HV loss in Aβ- participants.

Conclusions: Our results are consistent with previous studies showing that ε4 is associated with an increased rate of EM decline and HV loss in Aβ+ CNs. In Aβ- CNs, lower prevalence of modifiable cardiovascular risk factors was associated with better EM performance over time, suggesting interventions to reduce modifiable risk factors could be beneficial in this group.

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Clinical and Neural Correlates of Anhedonia in Frontotemporal Dementia

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Background and Objectives: Despite increasing evidence of motivational disturbances in neurodegenerative disorders, no study to date has explored the hedonic experience in dementia syndromes. Here, we present the first study to document the prevalence and neural correlates of anhedonia in frontotemporal dementia (FTD) and its potential overlap with related motivational symptoms including apathy and depression.

Method: A total of 172 participants were recruited, including 87 FTD, 34 Alzheimer's disease, and 51 healthy older Controls. Premorbid and current levels of anhedonia were measured using the Snaith-Hamilton Pleasure Scale, while apathy was assessed using the Dimensional Apathy Rating Scale, and depression was indexed via the Depression Anxiety and Stress Scale. Whole-brain voxel-based morphometry analysis was used to examine associations between grey matter atrophy and levels of anhedonia, apathy, and depression in patients.

Results: Relative to Controls, FTD patients showed clinically significant anhedonia, representing a clear departure from pre-morbid levels. This profile was not apparent in Alzheimer's disease who scored in line with healthy Controls. Voxel-based morphometry analyses revealed that anhedonia was associated with atrophy in an extended frontostriatal network including orbitofrontal and medial prefrontal, paracingulate and insular cortices, as well as the putamen. Although correlated on the behavioural level, the neural correlates of anhedonia were largely dissociable from that of apathy and depression.

Conclusions: Anhedonia is an overlooked yet primary presenting feature in FTD populations, with distinct neural drivers to that of apathy and depression. As a long-neglected symptom in FTD, future studies will be essential to address the impact of anhedonia on everyday activities and patient prognosis, and to explore novel strategies to improve patient and carer wellbeing.

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Emotional apathy in dementia: exploring the impact of altered reward processing

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Background and Objectives: Apathy is one of the most prevalent and disabling symptoms of dementia. While apathy is broadly defined as a loss of motivation and goal-directed behaviour, it is increasingly recognised as a multi-dimensional syndrome, with impairments in distinct neurocognitive mechanisms purportedly giving rise to executive, emotional and initiation apathy. Here, we took a transdiagnostic approach to examine the link between emotional apathy and altered reward processing across patients with different subtypes of dementia.

Method: Sixty-four dementia patients (33 behavioural-variant frontotemporal dementia, 14 Alzheimer's disease and 17 primary progressive aphasia) and 27 age-matched healthy controls were included. Patients were classified into high (HEA; n=36) and low (LEA; n=28) emotional apathy groups based on emotional apathy subscale scores on the Dimensional Apathy Scale. All participants performed two computerised instrumental reward learning tasks – one involving social outcomes (pictures of smiling or angry faces) and the other involving monetary outcomes (winning or losing money).

Results: Patients in the HEA group showed impaired learning from both social and monetary rewards, relative to controls. In contrast, performance in the LEA group did not differ significantly from controls. Furthermore, multiple regression analyses indicated that reward learning performance significantly predicted emotional apathy.

Conclusions: This is the first study to identify specific associations between impaired social and monetary reward learning and emotional apathy in dementia, supporting the notion that these symptoms are underpinned by deficits in reward processing mechanisms. From a clinical perspective, novel interventions that target these mechanisms may improve emotional apathy in people with dementia.

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A clinical trial to reduce apathy in residential aged care using virtual reality

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Background and Objectives: Virtual reality (VR) using head-mounted displays has demonstrated effectiveness as a powerful psychotherapeutic tool when used with exposure and distraction-based therapies. There is increasing use of VR with older adults, however, research evaluating benefits of VR with older clinical populations is limited. Apathy is a common neuropsychiatric symptom in neurological disorders associated with accelerated cognitive decline and increased risk of mortality. Recalling of autobiographical memories using reminiscence therapy has found to improve symptoms of apathy. Using VR as a tool for reminiscence therapy can provide an immersive and realistic experience that may improve outcomes compared with traditional approaches. This trial aimed to identify changes in apathy after a reminiscence therapy intervention using VR.

Method: Forty-three older adults living in long-term residential aged care were recruited and allocated to one of three groups; reminiscence therapy using VR; an active control using a laptop computer or tangible items and a usual care group. The primary outcome was apathy and secondary outcomes included cognition and depression. Objective measures of galvanic skin response, heart rate variability and speech were also collected.

Results: Preliminary results for the primary outcome using linear mixed modelling contrasts between both intervention groups and the usual care group show a significant difference, estimate = 5.60, SE = 2.55, t(40) = 2.20, p = .03. The VR group does not significantly differ from the active control, estimate = 5.33, SE = 2.91, t(40) = 1.84, p = .07. Remaining analysis are currently ongoing.

Conclusions: The findings from this study will help to establish the benefits of VR as a therapeutic tool to reduce apathy for older adults in residential aged care. If so, this may assist with delaying the rate of cognitive decline and improve quality of life.

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Understanding the overlap between autism spectrum disorder and frontotemporal dementia: Cognitive similarities and differences

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Background and objectives: The causes of novel social and behavioural changes in older adults remain unclear. In some cases, the aetiology is neurodegenerative as in the behavioural-variant of frontotemporal dementia (bvFTD), whereas in others the symptoms reflect a long-standing neurodevelopmental disorder such as autism spectrum disorder (ASD), which has become increasingly prominent with age. Some individuals have an atypical presentation where they meet diagnostic criteria for bvFTD but will not progress, and are hypothesised to have a neurodevelopmental aetiology. Despite this clinical conundrum, no studies have directly compared the clinical, cognitive and behavioural characteristics of these populations to identify potential differentiating features.

Method: Thirty-seven patients with bvFTD, 33 atypical bvFTD, 37 ASD and 37 controls were assessed on tests of emotion recognition, memory and executive function.

Results: On the emotion recognition task, both the bvFTD and ASD groups were significantly impaired compared to controls, whereas no difference was seen between atypical bvFTD and controls. Similarly, episodic memory as measured by the Rey Complex figure and RAVLT delayed recall, was significantly impaired in bvFTD and ASD, with no difference seen between atypical bvFTD and controls. All groups scored worse than controls for verbal fluency, whereas for mental flexibility (Trail Making Test B-A), only the bvFTD group was significantly impaired.

Conclusions: Considerable overlap in cognitive profile is seen between bvFTD, atypical bvFTD and ASD. However, atypical bvFTD tend to not be impaired on tasks of episodic memory and emotion recognition, whereas ASD show less widespread impairments in executive function. A careful neuropsychological assessment which incorporates tests of social cognition and executive functioning may help in the differential diagnosis between neurodevelopmental and neurodegenerative disorders. Prospective, longitudinal studies incorporating biomarkers will be important to understand how these groups may diverge over time.

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Getting to the heart of it: A multi-centre international investigation of cardiac interoception in neurodegenerative syndromes

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Background and objectives: Whether cardiac interoceptive accuracy, the ability to detect fluctuations in one's own heart rate, is impaired neurodegenerative syndromes remains inconclusive. This is despite the occurrence of pathological changes in key interoceptive structures in neurodegenerative diseases, such as the anterior insula and anterior cingulate cortex. The few studies to date, however, have used accuracy indexes where the role of attention was not considered and have been limited by small sample sizes. In a large multi-centre cohort, we hypothesized that all patients would show impaired cardiac interoceptive accuracy than healthy participants.

Methods: 170 participants (41 Alzheimer's disease, AD; 52 behavioural-variant frontotemporal dementia, bvFTD; 24 Parkinson's disease, PD; 53 healthy controls) were recruited across three international research centres (Argentina, Australia and Chile). All participants completed two 2-minute behavioural tasks, whilst simultaneous ECG was recorded. During each task, participants were asked to press a button each time they: 1) detected their own heartbeat, without external cues (Cardiac interoceptive task); or 2) when they heard a recorded heartbeat (Exteroceptive task). Accuracy was calculated by comparing the frequency of the event in the task (e.g., actual or recorded heartbeat) and the frequency of the participant's response in successive, overlapping 10 seconds windows. To account for periods of inattention, the regularity of participant's responses in each 10 second window was assessed and thresholding was applied. Then, the difference between frequencies was averaged across all windows to give a total mean distance index for each task.

Results: Our results showed that bvFTD patients were worse at cardiac interoceptive accuracy than healthy controls ($p = .001$). PD patients showed worse exteroceptive accuracy than healthy controls ($p = .008$). All participants had greater exteroceptive accuracy than interoceptive accuracy (all $p < .001$).

Conclusions: Our results provide the first evidence for impaired cardiac interoceptive accuracy in bvFTD

patients, when considering attention. This lowered interoceptive accuracy may underlie the social and emotional symptoms characteristic of bvFTD, and warrants future research. PD patients showed lower exteroceptive accuracy, which may reflect deficits in motor planning. Future neuroimaging research is needed to investigate the underlying neural mechanisms of these results.

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Validating social impact domains with the Huntington's Disease community: a qualitative study

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Background and Objectives: For people with Huntington's Disease (HD), tailored supports are required aligned with the progressive need for physical, cognitive-behavioural, psychological, and environmental assistance over time. Measuring unmet need is a fundamental step required to determine social impact of investment in, and provision of, services. This research had two objectives: 1. verify and map a draft set of HD Social Impact Domains (HD-SID) against existing national and international outcome frameworks; and 2. evaluate and finalise the HD-SID set using a co-design stakeholder-based approach with people with lived experience of, or expertise in, HD.

Method: A draft HD-SID framework, developed by Huntingon's Victoria using consumer engagement, was critically evaluated through a three-stage process: verification of the draft HD-SID face validity via interviews with clinical experts and HD community members (n=11); mapping the HD-SID against inter/national outcome frameworks; and four focus groups held with people with HD, families, service providers, and peak bodies (n=28), audio-recorded and transcribed verbatim for thematic analysis.

Results: The HD-SID was endorsed with minor amendments, and domain relationships were explored. Two overarching themes encompassed the discrete domains: risks and safety (including housing and economic sustainability) and social inclusion (health and symptom management; physical wellbeing; emotional wellbeing; building resilient relationships).

Conclusion: Effective measurement of impacts and outcomes for people with HD is informed by both extant measures and a nuanced understanding of specific population needs. The finalised HD Social Impact Domains have been co-designed with the HD community, providing an evaluation framework for service delivery and social impact.

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The QuickSort: a briefer alternative cognitive screen for older adults

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Background and Objectives: Sorting tests detect cognitive decline in older adults who have a neurodegenerative disorder, such as Alzheimer's or Parkinson's disease, and have comparable sensitivity and specificity as other commonly-used cognitive screens (Foran et al, 2021). The QuickSort is a brief, new, freely-available sorting test that is specifically designed to screen for cognitive impairment, quicker to administer and score, and better suited to a larger range of older adults than existing sorting tests (e.g., those with language difficulties or severe cognitive impairment). This study examined whether the QuickSort provides a reliable and valid alternative to lengthier cognitive screens.

Method: A cohort of older (≥60 years) community-dwelling adults (*n*=187) and consecutive hospital inpatients (*n*=73), all of whom were referred for neuropsychological assessment, were administered the QuickSort, Mini-Mental State Examination (MMSE), Frontal Assessment Battery (FAB) and Depression Anxiety and Stress Scale-21. The QuickSort requires people to sort 9-stimuli (colour, shape, number) and to explain the basis for their correct sorts, and yields three scores: Sorting (range: 0-12), Explanation (range: 0-6), and Total (range: 0-18) scores.

Results: The QuickSort was user-friendly, had good inter-rater and test-retest reliability, and took less than 2 minutes for cognitively and psychologically healthy older adults to complete, with most (95%) scoring ≥10. The likelihood of older adults being impaired on the MMSE or FAB, or both, increased by a factor of 3.52 (positive likelihood ratio) for QuickSort Total scores <10 and reduced by a factor of 0.23 (negative likelihood ratio) for scores ≥10, although the accuracy of interpretation was improved by using score-specific cut-scores.

Conclusions: The QuickSort is a quick, reliable and valid alternative to lengthier cognitive screens (e.g., MMSE, FAB). An older adult's performance on the QuickSort can be compared to their cognitively and

psychologically healthy peers and used to estimate the likelihood they will be impaired on either the MMSE or FAB, or both. The QuickSort may prove to be particularly useful when clinical resources for detecting cognitive impairment are limited.
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Session 8

Adult ADHD: Assessment, Diagnosis and Intervention

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This 'How To' session is targeted at clinicians who are interested in developing clinical knowledge and skills in the assessment and diagnosis of adult ADHD, as well as ways to support with neurocognitive intervention.Increasingly, adults of all ages are being referred to neuropsychology for diagnostic clarification of possible ADHD. This is likely due to increased community awareness and greater understanding of this condition. Adults with ADHD typically also present with longstanding challenges with mental health and emotional dysregulation, and this can be a complicating factor when providing diagnostic clarification.

The session will provide an overview of
1) The key clinical and cognitive features of ADHD in adults, and how to identify these alongside other psychiatric symptoms and presentations.
2) The key targets of assessment to aid with diagnosis, using a neuropsychological framework.
3) How to provide a supportive diagnosis in adults, particularly those with mental health comorbidities
4) An overview of the Adult ADHD neurocognitive skills group at The Melbourne Clinic based on Dr Mary Solanto's CBT group therapy model for adults with ADHD[a]

Level aimed for: Intermediate
Learning objectives:
- Key clinical features to be aware of and targets of neuropsychological assessment in adults with suspected ADHD
- Ways to provide a supportive diagnosis to adults with ADHD
- Pathways for neurocognitive intervention in adults with ADHD

References:
[a]Solanto, V. 2011. Cognitive-Behavioural Therapy for Adult ADHD. Guilford Press ISBN 9781462509638

Biographies:
Dr Caroline Fisher: Caroline is the Psychology Advisor at both The Melbourne Clinic and the Royal Melbourne Hospital. She is also the Chief Neuropsychologist at The Melbourne Clinic and the Family Safety Team Lead at the Royal Melbourne Hospital. Caroline is a clinical researcher and supervisor and has over 30 research publications, in areas including neuropsychology, clinical psychology, mental health and family violence. Dr Fisher also operates a private neuropsychology practice.
Dr Nicci Grace: Nicci is a senior neuropsychologist and at The Melbourne Clinic, Melbourne Australia. In this role she assesses a range of neurocognitive disorders in individuals with comorbid mental health conditions and facilitates inpatient group programs. Nicci also works as a clinician and researcher in other health and academic settings, including the Royal Melbourne Hospital and La Trobe University, and operates a private neuropsychology practice. Nicci has published a number of research publications, with several in the area of ASD.
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ASD in Adults: The diagnostic process

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This 'How To' session is targeted at clinicians who are interested in developing clinical knowledge and skills in assessment and diagnosis of adults with Autism Spectrum Disorder (ASD).
Increasingly, adults of all ages are being referred to neuropsychology for diagnostic clarification of possible ASD. This is likely due to increased community awareness and greater understanding of this condition. Adults with ASD typically present with longstanding challenges with mental health, and this can be a complicating factor when providing diagnostic clarification and intervention.
ASD is a neurodevelopmental disorder of variable severity that is characterised by difficulties in social interaction and communication and by restricted or repetitive patterns of thought and behaviour. There is presently a movement shifting the view of ASD away from seeing it as a 'disorder' and instead, viewing it as a 'neurotype'. Clinically, this can be supported by employing a strengths-based approach to the diagnostic assessment and feedback process.
The proposed session will provide an overview of
1. The key clinical and cognitive features of ASD in adults, and how to identify these alongside other psychiatric symptoms
2. The key targets for assessment to aid with diagnosis, using a neuropsychological framework.
3. How to provide a supportive diagnosis using a strengths based approach

4. Preliminary results of a qualitative study of consumers and staff with respect to ASD assessment currently being conducted at The Melbourne Clinic, in collaboration with the Olga Tennison Autism Research Centre, La Trobe University.

Level aimed for: Intermediate

Learning objectives:

- How to conduct a neuropsychological assessment in adults with suspected ASD
- How to identify and recognise the key clinical features of ASD in adults, including those with mental health comorbidities
- Ways to provide a supportive diagnosis to adults with ASD using a strengths based approach

Biographies

Dr Caroline Fisher: Caroline is the Psychology Advisor at both The Melbourne Clinic and the Royal Melbourne Hospital. She is also the Chief Neuropsychologist at The Melbourne Clinic and the Family Safety Team Lead at the Royal Melbourne Hospital. Caroline is a clinical researcher and supervisor and has over 30 research publications, in areas including neuropsychology, clinical psychology, mental health and family violence. Dr Fisher also operates a private neuropsychology practice.

Dr Nicci Grace: Nicci is a senior neuropsychologist and at The Melbourne Clinic, Melbourne Australia. In this role she assesses a range of neurocognitive disorders in individuals with comorbid mental health conditions and facilitates inpatient group programs. Nicci also works as a clinician and researcher in other health and academic settings, including the Royal Melbourne Hospital and La Trobe University, and operates a private neuropsychology practice. Nicci has published a number of research publications, with several in the area of ASD.

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How (and Why) to Present Your Research on Social Media

Brunner, Melissa[1,4]; Behn, Nicholas[2,4] and Selvadurai, Louisa[3,4]
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[3]School of Psychological Sciences, Monash University, Melbourne, Australia
[4]Social Media Editors, Brain Impairment, ASSBI

Using the internet, knowledge and information can now be shared instantly and people are able to access information quicker and easier than ever before. Social media provides a platform for researchers to share their work with a broader audience, supporting research translation and engagement with fellow researchers, clinicians, and consumers. Use of online platforms such as Twitter have the ability to increase research impact (Botting et al., 2017). A number of tools are available to assist with creating informative, digestible and impactful social media posts to showcase your research. In this session, we will present a step-by-step guide to creating: 1) simple video abstract, 2) an infographic, and 3) a Twitter thread. We will also highlight some useful resources that assist researchers to achieve impactful social media posts.

Level aimed for: Basic

Learning objectives:

1) Explore the benefits of sharing research work on social media
2) Understand how to create social media content to promote your research;
3) Understand how to build engagement and networks in social media;
4) Understand where to find resources available to guide your construction of social media posts.

Biographies:

The presenters are the Social Media Editors of the Brain Impairment journal. Dr Melissa Brunner is a postdoctoral researcher in the Acquired Brain Injury Communication Lab at the University of Sydney, and explores Digital Health and how individuals with brain injuries use social media. Dr Nicholas Behn is a lecturer and postdoctoral researcher at City, University of London, exploring communication difficulties after brain injury. Dr Louisa Selvadurai is a recent clinical neuropsychology graduate from Monash University and has a strong interest in rehabilitation within clinical neuropsychology practice.

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Session 9

No choices and nothing to do: Changing policy, practice and systems through programmatic research to prevent young people with acquired brain injury from being forced to live in aged care

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Background: The lives of younger people in aged care are characterised by boredom, loneliness and grief. They are denied many of the everyday choices that you and I take for granted – where to live, who to live with, what to eat and when. Younger residents have substantially different needs from elderly residents and aged care facilities do not have the resources, expertise or culture to support them. The aim of this paper is to describe how evidence collected through a sustained program of research has been instrumental in changing policy, practice and systems.

Method: A program of research was designed to change practice, policy and a system that admits younger people to aged care and leave them there. Studies completed include scoping literature reviews, analyses of administrative data, primary research including exploration of lived experience and evaluation of prototypes to provide solutions.
Results: While there have been many smaller wins that used evidence to change policy and influence practice, the Australian government's comprehensive Younger People in Residential Aged Care (YPIRAC) strategy 2020-2025 is the culmination of 15 years of work. Our initial research in 2006 demonstrated that YPIRAC was a social justice issue. Our recent activity has evidenced the ongoing nature and impact of the problem and is evaluating solutions. Review of current research shows young people (<65 yrs) with acquired brain injury in Australia, Canada, Ireland, UK and USA continue to be forced to live in RAC facilities which are unable to meet their basic needs. Ongoing analysis of administrative data also shows little change in the number of Australians under the age of 65 who live in RAC. The experience for these young people has not improved and is described as "worse than being in jail". In contrast, moving out of RAC and into a new home in the community brings marked change: *"Since moving here I have regained my love of life. My choice to do as I choose."* Today the role of our research program has moved from evidencing need for change to providing an evidence base that supports the government to achieve its stated goals.
Conclusions: Individual research projects alone are unlikely to have a lasting influence on policy or practice. However, a sustained and programmatic approach to research is an essential element of effective systems change that also includes policy expertise, influencing government, story-telling and collaborating with lobby groups.
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Implementing a transition-specific service model: Community re-integration outcomes of the ABI Transitional Rehabilitation Service (ABITRS) Pilot Project

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Background and Objectives: ABITRS was funded in 2016 as a 5-year Pilot Project to establish a transitional rehabilitation service for adults with ABI in Queensland, providing a 12-week community-based interdisciplinary rehabilitation program that commences prior to hospital discharge to support the transition home. A research evaluation to appraise service impact was conducted throughout the pilot. This presentation will discuss client community re-integration outcomes, a central focus of the service model.
Method: Clinical outcome data for consented ABITRS clients from Jan 2017 (start of clinical service) to 31 March 2020 were examined for statistically significant changes at 3 timepoints: pre-hospital discharge (baseline); 3 months (end of ABITRS program) and 12 months post-discharge from hospital. Where data were available, comparative analysis was conducted on corresponding measures at baseline and 3-months from a quasi-control client group (HIST), collected 2007-2009 as part of another study, representing 'usual care'. Twelve-month data were not collected for HIST. This presentation reports Mayo-Portland Adaptability Inventory (MPAI-4) and the Sydney Psychosocial Reintegration Scale (SPRS) outcomes. Statistical analysis involved linear-mixed model analyses, random intercept models and post-hoc analysis.
Results: At baseline, ABITRS clients (N=155) were more impaired across a range of measures than HIST (N=124) including functional abilities, independent living skills, home and community participation, adjustment to injury, interpersonal relationships status, and occupational activity. A considerably shorter inpatient stay for ABITRS clients may have contributed to this.
At 3 months post-hospital discharge (ABITRS program end), ABITRS clients had made significant clinical improvements, but HIST did not, in functional abilities, home and community participation, independent living skills, adjustment to injury and occupational activity.
At 12 months post-hospital discharge, ABITRS clients continued to have statistically significant improvements in functional abilities, home and community participation, independent living skills, adjustment to injury and occupational activity.
Conclusions: Evaluation of the ABITRS Pilot Project demonstrated improved community re-integration outcomes for people with ABI, both over time and in comparison with the HIST group, following specialised community-based transitional rehabilitation.
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Being a pioneer: A qualitative study of the experience of moving into SDA accommodation from the perspective of adults with neurological disability

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Background and objectives. Suitable housing is essential for stability, dignity, and quality of life. The National Disability Insurance Scheme (NDIS) provides funding for people with complex disability in Australia to access Specialist Disability Accommodation (SDA). SDA funded housing enables individuals to transition from shared living environments into housing of their own: however, there is limited research to inform best practice in facilitating this transition. The purpose of this study was to better understand the experience of moving into new SDA housing from the perspective of people living with disability.
Method. Seventeen adults with neurological disability (5 ABI; 1 Stroke; 4 Cerebral Palsy; 1 Multiple Sclerosis; 3 Spinal Muscular Atrophy; 1 Muscular Dystrophy; 1 Friedreich's Ataxia; 1 Autism Spectrum Disorder) undertook semi-structured interviews at two time-points (pre-move and 6-12 months post-move). Interviews explored participants' quality of life, community participation, social connection and support use. Guided by constructivist grounded theory, analysis moved through a process of data-driven open and focused coding, identification of emergent themes and relations between them using the method of constant comparison.
Results: Emergent themes reflected the contrasting nature of participants' lives in their pre-move homes versus new SDA homes and the challenge of transitioning between the two. Pre-move homes were described as '*not a good fit*' with experiences of social isolation, rigid institutional routines and a loss of hope for the future. In contrast, life in their new SDA homes was characterised as '*moving in the right direction*' with experiences of autonomy, choice and optimism for the future. The period of transition between the two environments, whilst a valued opportunity, was a difficult time of adjustment in which participants described '*feeling unprepared*' and somewhat like a pioneer.
Conclusions: This research confirms that moving into SDA housing can be beneficial for people with disability. Further, this research highlights a need for interventions supporting people transitioning from shared living to SDA housing.
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Hospital to home: Evaluating the discharge planning process for people with acquired disability and complex support needs.

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Background and Objectives: Globally, people with acquired neurological disability are at risk of lengthy delays to discharge that are both costly to the health system and distressing for individuals and their families. In Australia, the National Disability Insurance Scheme (NDIS) provides novel housing and support opportunities for this population; however, timely navigation of the health and NDIS interface is crucial for effective hospital discharge. The aims of this study were to evaluate the discharge process for people with disability and complex needs with a focus on the timeframes for navigating health and NDIS milestones.
Method: A retrospective and prospective cohort study design was used involving the collection of administrative data to record health and NDIS timeframes from 9 hospitals across Victoria, New South Wales, Queensland and South Australia.
Results: Administrative data for 242 patients with Spinal Cord Injury (SCI; n = 80); stroke (n = 71); other Acquired Brain Injury (ABI; n = 59) and other neurological disability (n = 32) admitted between 2016 and 2020 was collected. Overall, people with ABI and SCI had the longest lengths of stay. 35% of patients experienced a delay to discharge with the main barriers identified as NDIS related delays, difficulties sourcing housing and difficulties sourcing disability supports. Median days delayed in hospital (i.e., days between being discharge ready and actual discharge) was 64 (IQR 42-159) with a range of 4-622 days. Regarding health and NDIS timeframes, median days taken by health to identify patients as NDIS eligible was 26 (IQR 10-53) with a range of 0-322 days. Once patients were identified as eligible, median days taken to contact NDIS was seven (IQR 2-15) with a range of 0-90 days. Median days from NDIS plan approval to discharge was 55 (IQR 20-107) with a range of 2-731 days. Over time, days delayed in hospital and NDIS timeframes either reduced or saw less variability and extreme scores.
Conclusions: Despite improvements, prevalence of discharge delays remained substantial and were often attributable to NDIS processes and difficulties with sourcing housing, equipment, and formal supports. Identifying potential NDIS participants and commencing the NDIS application process earlier in the hospital admission may reduce these delays.
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Components of effective hospital discharge for people with acquired disability and complex needs: A Scoping Review

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Background and Objectives: People with acquired neurological disability and complex needs often experience lengthy hospital delays and discharge to unsafe and/or unsuitable housing. Effective discharge planning allows people to return to the community, increase or maintain functional independence and live a lifestyle aligned with their needs and preferences. Given the changing landscape of the health and disability interface, there is a need for up to date, evidence-based, discharge guidelines for this population. The aim of this scoping review was to identify key components of effective hospital discharge for people with acquired disability and complex needs.
Method: Five databases (MEDLINE, CINAHL, SCOPUS, AMED and EMBASE) were systematically searched from 2014-2021 for studies that reported qualitative and/or quantitative findings on hospital discharge outcomes for adults (aged 18-65) with acquired disability and complex needs. Key findings from nineteen eligible studies were integrated to inform overarching principles related to effective hospital discharge.
Results: Six interrelated and overarching principles emerged: 1) Commencing discharge planning early; 2) Coordination and continuity; 3) Involving the person with disability and close others; 4) Preparation for the transition home; 5) Tangible discharge supports; and 6) The importance of communication.
Conclusions: People with acquired neurological disability and their close others experienced difficulty navigating disparate hospital and disability systems with alarming consequences. Better understanding of the ways that discharge planning can facilitate safe and effective return to the community may guide interventions for improving the transition from hospital to home for people with acquired disability and complex needs.
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Moving from 'Gaps' to 'Networks': Service provider experiences and views of ABI vocational rehabilitation in Queensland

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Background and Objectives: Within Queensland, services to support adults with acquired brain injury (ABI) to return to work (RTW) are varied. Provision of, and access to ABI-specific vocational rehabilitation (VR) is limited, and no set frameworks are in place to guide Queensland clinicians in providing consistent VR to adults with ABI. The views and experiences of allied health rehabilitation clinicians were sought to identify current practices and service pathways for ABI VR and identify areas for future service development.
Method: This qualitative study investigated the knowledge and views of clinicians with experience in ABI and / or VR (n=34), with participants identified through professional bodies, major rehabilitation services and clinical networks. Clinicians participated in focus groups or an online survey to identify: experiences in providing ABI VR; ABI VR pathways and services; models, frameworks and tools for ABI VR; and recommendations for "ideal" early ABI VR services. Data was analysed qualitatively via a thematic content analysis.
Results: ABI VR was inconsistently delivered within and across services in Queensland, with differences in timeframes for rehabilitation, aspects of VR provided and access to services. Qualitative analysis identified five key areas related to ABI VR: Factors influencing ABI RTW; ABI VR service provision in Queensland; Processes of ABI VR (including assessments, interventions, indicators of readiness for RTW); Service gaps; and Ideal ABI VR services in Queensland (including developing clinician networks and a framework for ABI VR).
Conclusions: This study identified current clinical practice for ABI VR, as well as recommendations for future practice in Queensland, including clinician skill development, service delivery changes, developing a framework for ABI VR and developing ABI VR networks.
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User experience and preliminary evaluation of a simulator-based driver rehabilitation programme for people with acquired brain injury

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Background and Objectives: Return to driving after an acquired brain injury (ABI) facilitates increased independence and community participation. Where on-road rehabilitation is not a practical/safe, simulator training offers potential. We investigated the user experience, feasibility and preliminary efficacy of a driving simulator intervention for individuals with ABI.
Method: This pilot study used a randomised controlled design and qualitative interviews. Twelve

participants received eight sessions of simulator training over four weeks, plus usual driver rehabilitation care. Eight controls received usual care only. Feasibility and preliminary efficacy (i.e., on-road driving assessment, driver self-awareness and driver confidence) were measured quantitatively. Post-intervention, individual interviews were completed, and underwent thematic analysis.
Results: Quantitative analyses revealed no significant difference in on-road assessment pass-rate between groups. Additionally, we found a significant increase in confidence following simulator intervention – a change that was not found for usual care only. Qualitatively, clinicians reported a perceived impact of individual participant differences on intervention response (e.g., higher anxiety, older age), while participants overall reported a positive simulator experience. Specifically, participants reported perceived improvements in conscious awareness of attention (e.g., deliberate visual scanning), autonomy, self-efficacy and patience. Perceived utility for re-familiarization of driving, and safe preparation for return to on-road driving was also found. Fidelity and simulator sickness were considered drawbacks.
Conclusions: This research highlighted potential factors that may act as facilitators or barriers to engaging in the intervention, as well as potential psychological changes (i.e., confidence/self-efficacy) that may occur in response to training. These findings inform the continued application of driving simulators for improving driving outcomes post-ABI.
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Shopping routines: a qualitative study of adults living with a traumatic brain injury

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Background and Objectives: Evidence shows that following a traumatic brain injury (TBI) people may regain independence in basic daily activities but have continued difficulty with more complex activities, such as grocery shopping. Rehabilitation plays an important role in promoting community integration after TBI but there is currently limited understanding of the impact of brain injury on the complex task of grocery shopping. Therefore, this study aimed to understand the factors that influence the grocery shopping performance of people with moderate to severe TBI.
Method: A descriptive and exploratory approach was used to facilitate the interpretation of participants' experiences of shopping. Maximum variation purposive sampling was used to select 14 participants from both the inpatient and community-dwelling settings of a large metropolitan hospital. In-depth interviews were conducted, and thematic analysis was completed using a constant comparison approach to coding.
Results: Grocery shopping was described as one of the building blocks which was embedded within a person's wider routine. Participants described the importance they placed on grocery shopping after brain injury along a continuum ranging from 'independence' to 'participation'. A person's values, social context and roles influenced where their expectation fell on this continuum.
Conclusion: Shopping was identified to be an important component of a person's routine post TBI and was influenced by both personal and environmental factors. Further research is required to guide therapists' intervention approaches for improving performance of grocery shopping after brain injury and to consider how this may be incorporated into wider routine retraining.
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Factors Associated with Employment Stability Following Traumatic Brain Injury of Those Who Have Received Comprehensive Vocational Rehabilitation

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Background and Objectives: Returning to and maintaining employment following traumatic brain injury (TBI) is critical for psychological, social and financial well-being and overall quality of life. However only a minority of individuals with TBI succeed in returning to work. Vocational rehabilitation (VR) can assist return to work (RTW) however there is a lack of research into VR following TBI. Some studies have suggested that those who have received VR still experience ongoing injury-related difficulties however little is known about their long-term employment stability beyond RTW. The aim of this study was to examine the employment stability of individuals with TBI following their VR, to identify difficulties experienced and factors associated with employment stability.
Methods: This was a non-experimental cohort study. Participants were 72 individuals with predominantly severe TBI (77.77% male, Mean age 44.19 years). 93.8% worked full time prior to injury and all participants were eligible for and completed a comprehensive VR program up to 10 years prior

(Mean = 4.83 years post-injury). Semi structured interviews were conducted, and initial post-injury neuropsychological assessment scores were collected. Descriptive, bivariate and predictive analyses were performed using three employment stability measures: number of employers since injury, duration with employer and average weekly hours worked.
Results: 90.2% remained employed at the time of interview. However, participants worked significantly fewer hours post-injury, 63.9% changed roles or employers at least once and only 51% achieved their pre-injury level of responsibility. 61% reported a high level of employer support. Self-reported difficulties included ongoing physical injuries, memory problems and fatigue. Participants also demonstrated significantly impaired memory (34.4%) and processing speed (49.2%). After accounting for time since injury, demographic and employment variables (age, gender, pre-injury skill-level, employer support), injury severity (and related self-reported difficulties) and cognitive function significantly predicted the three employment stability measures.
Conclusions: Injury-related difficulties impact employment long-term, necessitating ongoing work modifications. Individualised VR is important, not only to facilitate return to work but to support long-term employment stability after TBI.
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Factors that Influence the Quality of Paid Support for Adults with Acquired Neurological Disability: Scoping Review and In-Depth Interviews

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Background and Objectives: Theoretically, individualised funding schemes empower people with disability (PWD) to choose high quality support services in line with their needs and preferences. Given the importance of support, the aim of the scoping review and in-depth interviews was to understand the factors that influence the quality of paid disability support for adults with acquired neurological disability from the perspective of PWD, close others and disability support workers (DSWs).
Method: A comprehensive scoping review of the published literature from 2009-2019 was conducted on five databases. In-depth interviews were conducted with people with acquired neurological disabilities, close others and DSWs to obtain their perspective on what influences the quality of paid disability support.
Results: Thematic synthesis of the 16 qualitative review articles revealed six interrelated themes depicting factors influencing the quality of paid disability support: choice and control, individualised support, DSW qualities, DSW competence, PWD – DSW relationship, and accessing consistent support. Qualitative analysis of preliminary interview data reveals considerable overlap with the scoping review findings. Notably, choice and control emerged as key to the quality of support with participants describing the importance of choosing and managing DSWs. Other corresponding factors include individualised support, DSW qualities including willingness to listen, as well as the importance of the PWD-DSW relationship. The interview data embellished the scoping review findings with nuance and descriptive examples. Factors not captured by the review were also described, including the importance of DSWs understanding the ‘why’ and considering the holistic impact of tasks in terms of PWD’s quality of life. Additionally, PWD valued DSWs who wanted to do the role, rather than those for whom it’s “just a job”.
Conclusions: Promisingly, preliminary interview findings support and expand upon the review findings, with considerable consensus, and the factors identified are in line with international rights legislation and policy ideals. The findings can provide insights to PWD hiring and managing support and facilitate the delivery of quality disability support. Further research is required to understand the interactions between the factors and how to optimise support in practice.
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Session 10

Identifying a core set of outcomes of neuropsychological assessment for use in research and clinical practice

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Background and Objectives: In today’s era of resource-limited health care, it is increasingly important to demonstrate the value of neuropsychological services. However, only a few studies have successfully identified outcomes that demonstrate positive impacts. To advocate for the funding necessary to provide accessible and affordable services, high quality randomised controlled trial-level evidence is needed to identify outcomes of neuropsychological assessment. This requires a core set of meaningful outcomes that are applicable to a range of settings, and sensitive to potential impacts of neuropsychological assessment. We aimed to (1) identify key potential outcomes of neuropsychological assessment, and associated outcome tools, and (2) identify issues and challenges associated with measuring these outcomes, for consideration in future research and clinical practice.

Method: Two linked studies were conducted. In study one, two focus groups of experienced neuropsychologists generated an initial list of outcomes. In study two, 46 neuropsychologists were surveyed using the Delphi method of expert consensus to narrow this list down to the most important outcomes through iterative surveys until at least 80% consensus was achieved for each outcome. Participants were also asked to suggest appropriate measures for every outcome, and to identify potential issues with measuring outcomes by answering open questions, responses to which underwent content analysis.

Results: There were 50 outcomes in the initial list generated by the focus groups. After three survey rounds in study two, a total of 16 items achieved consensus. The three most important outcomes, regardless of referral question, were ‘Better patient and/or caregiver understanding of presenting problems associated with diagnosis’, ‘Better patient and/or caregiver understanding of how to manage and cope with patient’s cognitive symptoms’ and ‘Diagnostic clarification’. Very few existing validated measures were identified for most outcomes. Content analysis of qualitative data identified several challenges associated with meaningfully measuring outcomes of neuropsychological assessment.

Conclusions: Key identified outcomes of neuropsychological assessment reflected the importance of psychoeducation, case formulation, and management recommendations. Findings will be used to develop appropriate outcome measures and inform future trials evaluating neuropsychological assessment outcomes.

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Using Neuropsychological Assessment to Inform Rehabilitation in a Prison Youth Unit: A New Zealand Perspective

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Background and Objectives: Research has consistently shown that having a traumatic brain injury (TBI) is an independent predictor of future criminal behaviours, imprisonment, and repeat offenses. Research has also demonstrated the significant impacts of trauma, polysubstance, and exposure to alcohol in gestation on cognitive abilities. There is currently limited data on the neuropsychological sequalae of those in the New Zealand youth offender population. Thus, the aim of this project is to identify and guide management of cognitive difficulties in the youth prison population as well as better inform available referral services based on in-depth neuropsychological assessment.

Method: From June 2020, clinical neuropsychological assessments were completed with consent in a local youth prison population, housing males aged 17 – 21 years. Findings of the assessments were fed back to the young person and their support staff. Referrals were made for services based on outcomes of assessments, questionnaires and interviews.

Results: This clinical project is ongoing until 2022; of the cohort screened to date (n = 35), the authors retrospectively audited de-identified neuropsychological screening results. Pathways to support the individuals working with the young men to support rehabilitation and subsequent referral generation were developed. Clinical implementation, collaboration with the correction system and community providers will be discussed.

Conclusions: Better understanding of the cognitive abilities of youth in a prison population can help shape rehabilitation programmes for this vulnerable population, potentially reducing risk of future criminal and violent behaviours. Improved understanding of neuropsychological sequalae and presentation can better inform appropriate referrals. Likewise, education to corrections staff regarding symptoms of cognitive, communication and behavioural issues can support recognition of behaviours as a sign of potential cognitive disability rather than a sign of insubordination.

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Perspectives from the Aboriginal Assessment Project: our experience conducting neuropsychological assessments of Aboriginal people living in rural NSW who had been charged with an offence

Murray, Robin and Schafer, Molly

Background and Objectives: Whereas Aboriginal and Torres Strait Islander Australians represent only 2% of the Australian population aged 18 and over, they now represent 28% of the prison population and this over-representation continues to rise. Aboriginal and Torres Strait Islander people in prison have also been found to suffer with disproportionate levels of cognitive disability. The aim of the Aboriginal Assessment project (AAP) was to reduce the number of Aboriginal and Torres Strait Islander people given a custodial sentence by assessing those suspected of cognitive impairment *before* they were sentenced in court. We hoped to divert those found to have cognitive impairment to rehabilitation and support services in the community including the National Disability Insurance Scheme (NDIS).

Method: We submitted a proposal to the New South Wales Department of Communities and Justice in which we offered to provide pro bono neuropsychological assessments for Aboriginal people in rural and remote areas of New South Wales. A grant covering travel and accommodation expenses was approved for a two-year period from June 2017 to June 2019. We conducted assessments for those people who had met criteria for probable cognitive impairment and who had been charged with an offence. Assessments typically lasted four hours and included a structured interview, cognitive testing, an adaptive behaviour questionnaire completed by a close relative or friend and where possible an interview with a close relative or friend.

Results: Forty-five Aboriginal people in the age range of 18-64 years were accepted in the project. Approximately eight out of ten had a prior criminal history as a child or as an adult; three were homeless; 14 were in custody; and almost all of the group (43/45) had a history of AOD abuse while a third of their parents had an AOD history. Nearly three-quarters of people were found to have impaired intellectual functioning while nine out of ten had impaired adaptive functioning. At least three-quarters of people had reading levels and numerical skills at or below the Year 3 level. Reports were submitted to court and 21 people were diverted from custody. Twenty five recommendations were made to the NDIS for support services.

Conclusions: Neuropsychological assessments for Aboriginal people living in rural areas and charged with an offence were demonstrated to have an impact on court outcomes. Nearly half of the people assessed were diverted from custody and referred to community treatment programs. Similar programs are needed in rural and remote areas of New South Wales and could provide a model for other states and territories. Tertiary programs in neuropsychology should encourage practitioners to work in rural areas. Additionally, there are far too few Aboriginal people trained as psychologists. The NSW government should encourage Aboriginal people to undertake degrees in psychology through publicly funded scholarships.

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The Weschler Adult Intelligence Scale, Fourth-Edition, Greek Adaptation (WAIS-IV GR): Normative Data for Elderly Greek Australians

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Background & Objectives: In the absence of reliable and valid neuropsychological measures, accurate assessment of culturally and linguistically diverse groups (CALD) is a major challenge facing the Australian neuropsychological community. The aim of this study was to investigate the construct validity and to develop specific reference group norms using the WAIS-IV Greek adaption (WAIS-IV GR) for elderly Greek Australians.

Method: A sample of 90 healthy elderly Greek Australians (M = 77.14 ± 4.46; Range = 70-85; 39 Males & 51 Females), with a primary school level of education (M = 5.60 ± 0.68; Range = 4-6) were recruited throughout the Melbourne metropolitan area.

Results: Confirmatory factor analysis indicated that a four-factor solution consisting of the WAIS-IV Index Scores displayed superior fit with significant parameters of acceptable magnitude ($\chi2(29) = 40.07$, $p > 0.05$, $\chi2 /df = 1.38$; RMSEA = 0.065 (90% CI = 0.00–0.11); CFI = 0.94; TLI = 0.91; AIC = 4345.40). Regression modelling showed that age, education and gender linearly predicted between 8% and 27% of the variance of the subtest raw scores. Age was the most significant predictor, therefore, normative data for all subtests were stratified according to three age bands. Normative data for all WAIS-IV GR subtests and indices were obtained, in addition to values for the 90% and 95% confidence interval bands.

Conclusion: Current findings support the application of the traditional WAIS-IV factor structure to a Greek-Australian sample. Utilising specific reference group norms for Greek-Australians with limited education will facilitate accuracy of assessment findings and avoid potential underestimation and/or misinterpretation of cognitive impairment.

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Investigating the National Adult Reading Test (NART-2) and Wechsler Test of Adult Reading Test (WTAR) in predicting Wechsler Abbreviated Scale of Intelligence – Second edition (WASI-II) scores in an Australian sample

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Background and objectives: Problems identified with the Test of Premorbid Functioning (TOPF) in local and overseas research pointed to the potential usefulness of updating local norms on older word reading tasks. This paper provides the results of our recent study that developed models predicting WASI-II scores from the NART-2 and WTAR variables and evaluated their accuracy within an Australian sample.

Method: The sample included 145 adults aged 18.91 to 70.64 years (M=34.70, SD=13.30), of which 78 (54%) were female. Analyses examined the reliability of the word reading tasks, bivariate relationships using Pearson correlations, and estimated WASI-II sores with multiple linear regression. Comparison of the accuracy of estimated scores using these regression models were made with actual WASI-II scores.

Results: Both the NART-2 and WTAR had sound reliability, with internal consistency, retest and inter-rater reliabilities >.85. A strong correlation was found between the NART-2 and WTAR, r=-.86. WASI-II index scores were moderately related to word reading tasks (r=.33 to.51, p<.01) and weakly related to age, years of education, and occupation. Significant models were identified for the four WASI-II index scores (with R^2=.20 to .36). The accuracy of these NART-2 and WTAR models' predictions of WASI-II scores appeared similar, with proportions of participants' WASI-II FSIQ-4 scores correctly estimated by these models within five, 10 and 15 points were 24.8% to 48.1%, 60.7% to 73.1% and 80.0% to 88.3%, respectively.

Conclusion: Models for predicting WASI-II scores from the NART-2 and WTAR and demographic variables had adequate strength and accuracy. A limitation of the study was the sample did not include participants with FSIQ>79. Further development and standardisation of word reading tasks for the prediction of premorbid intellectual functioning in the contemporary Australian context is warranted.

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The factor structure of the Hospital Anxiety and Depression Scale (HADS) in Australian adults with traumatic brain injury and a general community sample

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Background and objectives: There is confusion regarding the structure of the HADS within various clinical populations as 1, 2, 3, and 4 factor HADS structures have been reported in the literature. Our studies aimed to confirm the structure of the HADS in both an Australian sample of adults with TBI and a nonclinical Australian sample.

Method: HADS data from 371 Australian TBI patients was collected in a population study conducted by the Neurotrauma Register of Tasmania. HADS data from an additional 347 participants from the Australian general population. Data from half of the TBI sample underwent EFA, while CFA was carried out on the remaining subset of TBI data. Data from the nonclinical sample underwent CFA.

Results: In the TBI sample, EFA suggested 2-factor (anxiety, depression) and 3-factor (anxiety, psychomotor, depression) structures provided good fit. CFA strongly supported the 3-factor model. Differences were noted in the trajectories and predictors of recovery after TBI between these factors. In the nonclinical sample, both 2-factor (anxiety, depression) and multiple 3-factor structures provided good fit. The third factors in these models were defined as Negative affectivity, Restlessness, or Psychomotor agitation.

Conclusions: A 3-factor model provided good fit in the TBI sample, while 2-factor and 3-factor models had good fit in the nonclinical sample. Further investigation of the construct measured by the third factor will assist clinicians in selecting appropriate HADS models. Together, these findings provide clinicians with confidence in using these models in Australian TBI and general population samples when using the HADS.

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The factor structure of the Rivermead Post Concussion Symptoms Questionnaire in Australian adults with traumatic brain injury

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Background and objectives: Many people who sustain traumatic brain injury suffer ongoing post-concussion symptoms (PCS). The Rivermead Post Concussion Symptoms Questionnaire (RPQ) is one widely utilised measure of PCS. However, there has been disagreement about its structure. This study compared the fit of published structures of the RPQ with a four-factor structure derived from a large sample of adults with TBI in Tasmania.

Method: A sample of 661 adults with TBI completed the RPQ approximately one month after injury. An Exploratory Factor Analysis (EFA) using the first half of the sample (n=330) suggested a four-factor solution.

This structure was then compared with 1, 2 and 3-factor models reported in the literature within the second half of the sample (*n*=331), utilising bootstrapping for model comparison (AMOS v.20). Fit indices and trajectory of recovery across these four factors were examined within this sample at time-points to 12 months following injury.
Results: RPQ items were severely positively skewed. Spearman's correlations showed some stronger item grouping for aspects of somatic, cognitive and emotional functioning. Results of the EFA identified a four-factor model. Confirmatory factor analyses (CFA) showed the data best fitted the four-factor model, which also had adequate internal consistency and appeared clinically useful, as there were some differences in recovery across these constructs up to 12 months following injury.
Conclusions: The data best fitted a four-factor model for RPQ items: Mood and somatic, Cognitive, Vertigo and Vision items. This structure was identified using a rigorous statistical approach, and appeared clinically useful. Future research could attempt replication within international samples.
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The Guddi Way Screen: Developing a culturally sensitive cognitive screen for Aboriginal and/or Torres Strait Islander Peoples.

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Background: In Australia many Aboriginal and/or Torres Strait Islander Peoples experience increased risk of cognitive impairment through high exposure to risk factors such as violence, alcohol and substance misuse, chronic illness, brain injury, and stroke. However, culturally appropriate methods for identifying cognitive impairment in this group are lacking. Standard cognitive tests typically require written responses and can resemble mainstream educational processes. This can be a disadvantage in populations where English is not the first language, or amongst marginalised groups where poor English literacy and a lack of formal education are common. This paper reports on the development of a cognitive screen for Aboriginal and/or Torres Strait Islander Peoples.
Method/Development process

- Cultural Development: The guiding principles of the cultural protocol which underpins the Guddi Way Screen include i) a culturally sensitive framework for engaging with Aboriginal and/or Torres Strait Islander communities; and ii) culturally appropriate methods and processes for administering the screen.
- Development of cognitive screen: Drawing on existing cognitive screens and extant literature relating to cognitive impairment and culturally safe assessment the Guddi Way cognitive screen was developed in collaboration with Aboriginal and/or Torres Strait Islander advisors. The screen includes tasks assessing cognitive skills across seven broad cognitive domains relevant to neurocognitive disorders including language; memory; attention; praxis; visuospatial skills and executive functioning.
- Preliminary validation includes face and content validity, and cultural validation processes undertaken with Community Elders.

Results: Early testing indicates that the screen is acceptable to Aboriginal and/or Torres Strait Islander participants, and sensitive to cognitive impairment.
Conclusions: The Guddi Way Screen shows promise as a culturally validated engagement and screening process to identify cognitive impairment. Further validation will be undertaken in 2021.
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Session 11

How to: Run an online memory group for individuals with cognitive decline

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Synopsis of session: The LaTCH memory management program is a group intervention teaching compensatory strategies and providing psychoeducation for older adults, including those with mild cognitive impairment. The program's efficacy has been demonstrated through two randomised trials, a five-year follow-up study, and translation to practice with a community organisation. Program benefits include improved (i) knowledge of memory strategies; (ii) use of memory strategies; (iii) self-reported memory ability; and (iv) memory contentment and self-efficacy. Furthermore, participants report normalisation of their memory concerns, realisation that others experience similar difficulties, acceptance of their memory ability, and feelings of enhanced coping and self-efficacy, which highlight the importance of the group aspect of the intervention. To date, the program has been run face-to-face, but this has not been possible during the COVID-19 pandemic. In this session we will discuss our experience of adapting and running our LaTCH memory group for older adults diagnosed with mild cognitive impairment via Zoom. The session will cover practical details of how the transition from a face-to-face group to an online group was managed and will outline solutions to practical challenges and benefits that emerged.

Level aimed for: Intermediate

Learning Objectives: Participants will learn 1) how to adapt an existing face-to-face neuropsychological group program for online delivery, 2) how to tackle barriers occurring due to older age and cognitive impairment when presenting in an online format and 3) how to maximise the benefits of the online approach

Biographies of Presenters:

Liz Mullaly has been a neuropsychologist for 36 years, currently working in private practice and as a senior neuropsychologist at the Caulfield Hospital CDAMS. Liz has taught and supervised extensively throughout her career, particularly within the La Trobe University neuropsychology graduate program. From the research perspective she has participated in the development and evaluation of the LATCH (La Trobe and Caulfield Hospital) Memory Program, now delivered at Dementia Australia and in several Victorian Hospitals.

Liz Rand is an Occupational Therapist and is the Manager of the CDAMS at Caulfield Hospital in Melbourne. Liz has over 30 years' experience working with older adults who have concerns about their memory. She has been involved in supports and services available for people with concerns and difficulties with memory and thinking, including those with dementia. She is currently part of the ADNET (Australia Dementia Network) steering committee. Liz is co-author of the book *Living with Alzheimer's and Other Dementias*. Her areas of research interest include memory groups, apathy, and the impact of dementia diagnosis on engagement with referrals for support. Liz is one of the founders of the LaTCH memory management group program – a face to face group program for older adults focused on learning about how memory works and strategies to support memory in everyday life.

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OPTIMiSE: A feasible, acceptable, and efficacious online memory strategy training program for older adults

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Background and Objectives: Face-to-face groups that teach strategies for managing everyday memory issues help maintain and improve cognitive health of older adults. Face-to-face delivery, however, is resource intensive and access is restricted for older adults with reduced mobility, limited transport, or residing in rural or remote areas, as well as additional issues caused by the COVID-19 pandemic. Online interventions aim to overcome these barriers. This pilot aims to evaluate the feasibility, acceptability, and efficacy of one such online intervention; the Online Personalised Training in Memory Strategies for Everyday (OPTIMiSE) program.

Method: 633 people completed screening for the program. Of these, 357 Australian adults aged ≥ 60 years who reported subjective cognitive decline over the last 10 years completed all baseline measures, including the Multifactorial Memory Questionnaire ability, satisfaction, and strategy scales, and satisfaction with up to three personal memory goals. 154 participants completed the six-module program focused on improving knowledge regarding memory and providing effective memory strategies for everyday life, and completed some post-intervention evaluation.

Results: This online program was feasible for the target group, as demonstrated by the strong interest and satisfactory level of attrition. OPTIMiSE was also acceptable, with 97% of participants responding "Agree" or "Strongly Agree" when asked if they would recommend the course to others. OPTIMiSE was also efficacious, with improvements in self-reported memory ability, $t(127) = 9.09$, $p<.001$, memory satisfaction, $t(127) = 14.18$, $p<.001$, and memory strategy use, $t(127) = 8.96$, $p<.001$, after the intervention. Participants also reported increased satisfaction with their personal memory goals, $t(106) = 11.05$, $p<.001$.

Conclusion: OPTIMiSE is feasible, acceptable, and efficacious for older adults reporting cognitive change. OPTIMiSE has the potential to enable access to an evidence-based memory intervention to older adults worldwide, even during the current pandemic and in a post-COVID-19 world. This is particularly important for supporting the growing number of older adults living with cognitive concerns worldwide.

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Improving Memory Self-Efficacy, Control Beliefs and a Sense of Community in Older Adults via Online Learning

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Background and Objectives: *Memory self-efficacy* (MSE) and *control beliefs* (CB) are important aspects of everyday memory, and potential intervention targets of memory groups. Whilst memory group interventions are usually face-to-face, mobility issues, restricted transport access, or remote residencies create barriers to access. The Online Personalised Training in Memory Strategies for Everyday (OPTIMiSE) course enables a memory intervention to be delivered online. We aimed to determine if OPTIMiSE delivered similar changes in MSE and CB to previous face-to-face memory interventions. Additionally, we wanted to assess whether a sense of community (SOC) and group belonging could be engendered through the use of discussion boards, providing opportunities for participants to interact and share their experiences about memory concerns.

Method: OPTIMiSE is a 6-week online memory course for people aged 60 and above who report changes in their cognition in the last 10 years. It is designed to increase knowledge about memory processes, help normalise age-related memory decline, and teach practical memory strategies to assist with common everyday problems. It was completed by 127 participants (103 Female, aged 60 to 88). A self-developed 8-item MSE questionnaire and the Memory Controllability Inventory (MCI; Lachman et al., 1995) were administered pre- and post-intervention. Participants also completed the Brief Sense of Community Scale (BSCS; Peterson et al., 2008) at the end of the course.

Results: Participants reported higher MSE after OPTIMiSE, $t(126) = -9$, $p < .001$. Participants also reported stronger CB on the following subscales: *Potential Improvement*, $t(126) = -9.39$, $p < .001$; *Independence,* $t(126) = -7.87$, $p < .001$; *Present Ability*, $t(126) = -7.34$, $p < .001$; *Inevitable Decrement*, $t(126) = 7.38$, $p < .001$ and *Alzheimer's Likelihood*, $t(126) = 9.07$, $p < .001$. Less promising were the findings for SOC within OPTIMiSE, with average scores for each item just below the midpoint or 'unsure' ($M = 2.95$, $SD = 0.69$).

Conclusions: OPTIMiSE enhanced older adults' self-confidence regarding their memory abilities and aided the belief that memory is controllable. The inconsistent SOC findings suggest not all participants experienced a definite or strong SOC despite encouragement to post and engage with the online discussion boards. Further investigation into why some participants did and others did not experience a SOC is warranted in future studies.

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Alignment between subjective memory complaints, objective memory performance, and goal attainment as outcome measures following memory rehabilitation post-stroke

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Background and Objectives: Support for memory difficulties is a significant unmet need of many survivors of stroke. Memory rehabilitation can address these difficulties. However, gains can be difficult to measure and may not be consistently sustained long-term. We aimed to 1) examine the alignment of memory-related subjective, objective and goal attainment measures in response to memory rehabilitation interventions, and 2) determine the best way to meaningfully capture rehabilitation outcomes.

Method: Participants were stroke survivors ($n = 26$, 76.9% male) who completed a memory skills group program and were randomised to either booster sessions, electronic reminders or usual care as maintenance interventions. We examined the alignment of subjective and objective memory outcomes, and the trajectory of goal-consistent and goal-inconsistent subjective memory complaints before the memory intervention, post-intervention (6-weeks later), and post-maintenance interventions (18-weeks later). Subjective memory was measured using the Everyday Memory Questionnaire-Revised (EMQ-R); ecologically valid objective memory was measured by the Royal Prince Alfred Prospective Memory Test;

and participant goals assessed using Goal Attainment Scaling. EMQ-R *Forgetting* and *Attention* domain scores were classified as goal-consistent or goal-inconsistent for each participant.

Results: There was a significant improvement in goal-consistent, but not goal-inconsistent, subjective memory complaints following exposure to the memory skills group, with a large effect size (partial eta squared = 0.16). No significant relationship between subjective memory and objective memory performance was detected post-memory group (r = -.19, p = .40) or post-maintenance intervention (r = .09, p = .78). Regardless of maintenance intervention exposure, the magnitude of reduction in goal-consistent and goal-inconsistent subjective memory complaints did not differ significantly.

Conclusions: These findings suggest that subjective and objective measures can be reliably used to assess separate memory constructs. Subjective memory complaints occurring in the same domain as participants' goals appear to be a sensitive measure of response to a memory skills group intervention. Initial goal-consistent improvements in subjective memory did not generalise to goal-inconsistent domains long-term, despite the provision of maintenance interventions. Further research is required with a larger sample size.

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Session 12

How to plan and implement a single-case experiment: a practical, 10-step guide

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Synopsis of session

The single-case experimental design (SCED) provides a methodology for the study of a single individual that goes well beyond a simple case description or case report. Well-designed SCEDs are scientifically rigorous and are able to control threats to internal and external validity. They are useful in both research (particularly in situations where it is difficult to achieve an adequately powered sample size) and clinical practice. We have developed a practical 10-step guide to plan and implement a high quality SCED that derives from our research into the critical appraisal of SCEDs.

In this "how to" session we present the step-by-step guide. The decisions and tasks of the guide cover issues pertinent to selecting and measuring the target behaviour, identifying and specifying the intervention elements, selecting the most appropriate research design to evaluate the intervention, implementing procedures to ensure data fidelity and treatment adherence, and data evaluation.

Level: Intermediate: This session will be of interest to clinicians, researchers and advanced students who want to know how to implement a SCED. Familiarity with basic concepts of SCEDs will be advantageous.

Learning objectives:

Participants will gain knowledge of the elements involved in planning and implementing a SCED, including issues pertinent to:

1. the dependent variable (the target behaviour)
2. the independent variable (the intervention)
3. prototypical SCED designs
4. data evaluation

Biographies:

Robyn Tate and Michael Perdices

Professor Emerita Robyn Tate has a background in clinical and neuropsychology, with clinical experience in the rehabilitation of traumatic brain injury, and is based at the John Walsh Centre for Rehabilitation Research at the University of Sydney, Australia. Dr Michael Perdices has a background in clinical neuropsychology and has 30 years of clinical experience in the assessment and diagnosis of acquired brain injury in a broad spectrum of neurological conditions. Robyn and Michael have collaborated on single-case research and evidence-based clinical practice for 20 years. They have published more than 30 scientific works on single-case methodology, including a co-authored textbook in 2019, book chapters, and journal articles on theoretical issues and empirical single-case experiments. They have given invited keynote addresses on single-case methodology at international conferences and conducted many workshops on the topic, both nationally and internationally.

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What are the predictors of TOMM failure in clinical TBI populations? A retrospective analysis

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Background and Objectives: Most research on neuropsychological performance validity tests (PVTs), such as the Test of Memory Malingering (TOMM), has focused on medico-legal, forensic and military settings; there is far less information regarding failure rates in clinical populations. This study aimed to determine the base rates of TOMM failure in TBI patients referred for clinical assessment and the factors contributing to failure.

Method: Retrospective file review of consecutive TBI referrals for neuropsychological assessment at Liverpool Hospital Brain Injury Rehabilitation Unit, Sydney, Australia, between July 2012 and December 2019 in which TOMM data was available. TOMM failure was conventionally defined as TOMM Trial 2 or Retention Trial < 45/50. Univariate associations with TOMM failure were examined for demographic, injury, financial compensation status, occupational, and medical information. Significant predictors were retained in a nominal logistic regression model.

Results: 491 patients with TBI (age *Med*=40 years [*IQR*=26 years], 78.6% male, 81.51% with a very severe TBI or greater) were identified. Overall, 48 patients (9.78%) failed TOMM. Outpatient setting, review assessment, milder injury (<1 day PTA), financial compensation eligibility, culturally and linguistically diverse (CALD) background (particularly when an interpreter was used), and post-injury psychological dysfunction were all associated with TOMM failure in univariate analyses ($ps<.05$). Interpreter use (OR=7.29, 95%CI=3.41-15.61) and outpatient setting (OR=3.68, 95%CI=1.30-10.38) remained significant predictors in the logistic regression model while post-injury psychological dysfunction was marginally significant (p=.052; OR=2.31, 95%CI=0.99-5.40) (model χ^2=61.51, p<.0001; Nagelkerke R^2=.272). The failure rate for interpreter cases was 48.84% in the outpatient setting vs. 6.67% in the inpatient setting. By comparison, 9.13% of non-interpreter outpatient cases failed the TOMM vs. 2.13% of inpatient cases.

Conclusions: This study suggests that TOMM failure very rarely occurs in clinical assessment of TBI patients in the inpatient rehabilitation setting. It is more common in the outpatient setting, particularly when an interpreter is required. The findings imply that routinely administering the TOMM in TBI clinical outpatient assessments is important in order to ensure that neuropsychological test results can be interpreted with a high degree of confidence.

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Assessing Social Cognition in Acquired Brain Injury: Results from a Scoping Review

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Background and Objectives: Social cognition is a contributing factor to the changes observed in social functioning following acquired brain injury (ABI). Despite developments in this area, progress is limited by; 1) inconsistent terminology that complicates interdisciplinary communication, 2) no consensus on the domains of social cognition, and related, 3) no consistent application of social cognition assessments within this population. This review aimed to systematically identify the most common terms used by researchers in social cognition in ABI, and identify the most used assessment tools and the appropriateness of these tools for researchers and clinicians.

Method: A systematic approach to searching was undertaken using the PRISMA checklist and hand searching. Six electronic databases were included (PSYCINFO, MEDLINE, EMBASE, Psychology & Behavioural Sciences, Psychology Database and Scopus) with an initial search yielding 6,946 citations, of which 3,231title and abstracts were screened and 367 citations retained for inclusion in this review reporting 10,930 people with ABI.

Results: All studies have been published since the 1980s with 86.1% published since the turn of the century. The majority of the studies were from the United States and Canada (39.2%) and were cross-sectional (82.8%). Five main domains of social cognition were identified: emotion perception (43.9%), theory of mind (32.2%), social communication (17.4%), identity recognition (14.4%) and empathy (13.4%). The most commonly used tools to measure these domains included: the Ekman and Friesen photo series, Faux Pas Recognition Test, La Trobe Communication Questionnaire, Benton Facial Recognition Test and the Interpersonal Reactivity Index. The psychometric properties of each of these tools is discussed.

Conclusions: By identifying the most relevant domains of social cognition in ABI and exploring the appropriateness of the most commonly used measures we can guide the activities of researchers and clinicians in social cognition. This information can be used to increase consistency in the assessment of social cognition in ABI, better informing treatment approaches that will lead to improved outcomes for people with ABI and their families.

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Development of a Clinical Assessment Tool for Social Cognition in Acquired Brain Injury: A Validation Study

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Background and Objectives: Changes in social skills are a defining feature of Acquired Brain Injury (ABI) affecting an individual's ability to maintain meaningful social relationships, return to work, contribute to society and engage with rehabilitation. Despite this, little attention is given to the social deficits that characterise ABI, in part due to a lack of appropriate clinical assessment tools. The Brief Assessment of Social Skills (BASS) is a multidimensional assessment tool of social cognition adapted for use in people with ABI.

Method: The BASS was administered to 22 people with an ABI (M_{age} = 43.5; 10F:12M) and 22 healthy control participants (M_{age} = 43.0; 10F:12M). Participants completed several other assessments of cognition to examine the validity and reliability of the BASS in this population.

Results: Participants with an ABI performed significantly worse on the BASS compared to control participants (p<.01). Performance on the BASS was not affected by age (p>.05) or years of education (p>.05), nor were there gender differences (p>.05). There was a weak positive correlation between performance on the BASS and premorbid IQ (p = 0.18) for participants with ABI. A weak positive correlation was observed between BASS empathy total and affective empathy, measured using the Questionnaire of Cognitive and Affect Empathy (p = 0.10).

Conclusions: The emergence of social cognitive impairments following ABI increases caregiver burden and can distress the individuals themselves. This preliminary data is promising and with further collection of normative data and evidence for the validity and reliability of the BASS, it is hoped the BASS will be included in routine clinical assessment. This will provide families with information to better manage changes in social skills, and clinicians with identification of social cognition treatment targets.

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Are individuals ready for telehealth after a moderate to severe traumatic brain injury?

A cross sectional study

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Background and Objectives: The global COVID-19 pandemic has catapulted telehealth into the mainstream, however, patient readiness to adopt telerehabilitation after a traumatic brain injury (TBI) is not known. Readiness for video-based telehealth was assessed in individuals with a TBI using self-report measures and relationships between technology related factors, demographic variables and injury severity were explored.

Method: Participants aged 18-65 years with a moderate to severe TBI (N=49) were recruited from various sites across the NSW Brain Injury Rehabilitation Program. Participants completed questionnaires including standardised measures assessing computer fluency, computer anxiety, and computer self-efficacy as well as a project specific survey exploring device and internet use and videoconferencing (VC) experience.

Results: Technology fluency amongst the sample was high (M=85.94; SD=18.57) and was positively associated with education and computer self-efficacy while negatively associated with computer anxiety. All participants reported use of at least one VC capable device, and the majority had experience using VC both before (n=38; 80.9%) and after their injury (n=39; 83%). Injury severity and age was unrelated to technology fluency, computer anxiety and self-efficacy. Participants whose device use was limited to a smart phone exclusively (n=10; 21.3%) had less experience with VC, reported more computer anxiety, lower levels of computer fluency and lower computer self-efficacy, than those using multiple devices.

Conclusion: Videoconferencing is an accessible mode of telehealth care delivery for individuals with a TBI, but additional support may be needed for patients with lower education background and whose device use is limited to a smart phone.

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The diagnostic validity of neuropsychological methods for the pre-surgical lateralization of seizure foci in temporal lobe epilepsy: A systematic review and meta-analysis

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Background and Objectives: The selection of suitable candidates for resective surgery in the neurosurgical management of treatment refractory Temporal Lobe Epilepsy (TLE) is a complex process informed by a number of interacting clinical and pathological criteria. One of the clinical criterion considered is the patient's preoperative cognitive profile as indicated on neuropsychological assessment. Neuropsychological methods are implemented to determine whether the pattern and level of cognitive function as demonstrated on cognitive testing is concordant with the seizure focus as demonstrated on other forms of pre-surgical investigation. Concordance suggests a greater likelihood of correctly identifying, and therefore resecting, the epileptogenic tissue causing the seizure activity, in turn increasing the probability of post-operative seizure freedom. Where the seizure focus as indicated by the preoperative cognitive profile is not concordant with other forms of pre-surgical investigation, the patient may be deemed unsuitable for surgery. Despite the clinical significance of neuropsychological assessment in the surgical decision-making process, to date, no systematic review or meta-analysis has been undertaken to examine the diagnostic validity of neuropsychological measures routinely used in clinical practice to lateralize seizure foci. The aim of this review was therefore, to quantitatively synthesize the literature on the diagnostic validity of neuropsychological methods for the lateralization of seizure foci.

Method: A systematic review was conducted according to the PRISMA guidelines. A search of the electronic databases Medline, EMBASE and PsycINFO was conducted for all journal articles published between January 1990 and June 2020 (PROSPERO protocol registration number: CRD42018100330). Data extraction was conducted according to an adapted version of the Cochrane Data Extraction Template (Version 1.8; Cochrane Consumers and Communication, 2016). Meta-analysis was undertaken using Comprehensive Meta-Analysis software.

Results: 25 articles were eligible for inclusion. Neuropsychological methods used to lateralize seizure foci included measures of intellectual functioning, memory and language. Overall, neuropsychological methods yielded low diagnostic validity for pre-surgical seizure lateralization.

Conclusions: The results of the current systematic review and meta-analysis represent the first clear evidence for the diagnostic validity of neuropsychological measures in the lateralization of seizure foci, and strongly suggest that neuropsychological services may be better utilized in other areas of preoperative evaluation.

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Clinical indicators of visual deficits following chronic severe traumatic brain injury

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Background and Objectives: A range of visual deficits have been described following traumatic brain injury (TBI). This is not surprising given that approximately $2/3^{rds}$ of the brain subserves visual processing. We undertook visual assessments in a group of participants with chronic severe TBI to describe: i) the type of visual deficits recorded and, ii) the presenting clinical indicators associated with these visual deficits.

Method: Fifteen participants (14 male) participated in this investigation. Their visual data were collected as part of our study investigating eye movements to facial expressions. Participants had sustained a severe TBI between 1 and 20 years ago (7.7 ± 6.1 years) and ranged in age from 21 to 60 years (mean ± SD: 37.5 ± 10.8 years). Various orthoptic assessments were performed.

Results: Ocular movements were restricted in 80% of participants (12/15), with 30% (3/15) involving both eyes. Strabismus was recorded in 80% of participants, with most eye deviations in the horizontal meridian (67%, 10/15). Aberrant regeneration of the third cranial nerve (CNIII: oculomotor nerve) was recorded in one participant. 7/10 participants (70%) demonstrated saccadic impairment, which comprised reduced velocity (20%), inaccuracy (40%), and/or increased latency to stimulus (40%). Three participants (20%) reported double vision on the day of assessment in some or all positions of gaze. Interestingly, 9 participants (60%) demonstrated associated clinical indicators of visual deficits. These included: covering an eye with a patch, closing an eye or adopting an anomalous head posture which comprised either a head tilt to one shoulder, head turn or both. These clinical signs were associated with the participant's need to attain single vision.

Conclusions: There is variation in the type of visual deficits that people present with following chronic severe TBI. This heterogeneity is likely reflective of the nature of the pathophysiology of the injury. It is unclear how visual deficits alter over time following severe TBI and longitudinal investigation is required.

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Session 13

How to Session

Goal setting for neuropsychological intervention using modified goal attainment scaling

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Synopsis of session:
There is a strong and compelling case for neuropsychologists to apply their expertise in brain-behaviour relationships to help clients with brain impairment improve their functional cognition, as well as to address distressing or disabling behaviours. Whilst there are now well-established evidence-based intervention strategies within the fields of cognitive rehabilitation for acquired brain injury and cognitive remediation for mental health conditions, it may be difficult for the newcomer to neuropsychological intervention to know how to design and/or commence an intervention.
From a client-centered perspective, one of the best ways to start is by collaboratively setting goals with one's clients. Goal Attainment Scaling (GAS) has a long heritage of use in mental health and neurological rehabilitation services. It allows for the setting of individually tailored goals whilst allowing for standardised comparison of goal outcomes across goals and/or clients. The current session will describe a modified approach to GAS that lends itself to neuropsychological intervention. Case examples will be provided to elucidate how to use this tool to get the clinician started in setting neuropsychological intervention goals with their clients.
Level aimed for: Basic
Learning objectives:

- How goal setting can help structure a course of neuropsychological intervention.
- How to set a goal and scale it using modified goal attainment scaling.

Biography:
Dr Jamie Berry is a Senior Clinical Neuropsychologist and the Director of Advanced Neuropsychological Treatment Services (ANTS). He is a Fellow of the Australian Psychological Society (APS) College of Clinical Neuropsychologists (CCN). He has taught on the neuropsychology undergraduate and postgraduate programs at Macquarie University for over 20 years. Jamie has clinical and research interests in neuro-rehabilitation for working-age individuals with acquired brain injuries, substance use disorders and severe mental illness, and he has been using goal attainment scaling in his practice for over 15 years.
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Session 14

'I really liked seeing the child in his natural environment': Clinician perceptions of using standardised language assessments via telehealth

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Background and Objectives*:* Telehealth is rapidly becoming an essential part of many speech-language pathologists' core business, and yet the experiences and opinions of community-based therapists in using telehealth remain relatively unknown. This paper describes a recent study in which speech-language pathologists in community settings were provided with access to a standardised language assessment within a telehealth platform and asked to provide feedback about their experiences.
Method*:* Twenty-seven speech-language pathologists in paediatric practice were recruited via callouts on social media, community contacts and professional networks. The participants were provided access to a telehealth platform with a built-in standardised language assessment and asked to use the assessment with their own caseload as clinically indicated and provide feedback after each assessment. Questionnaire data was collected via an online survey system (Formstack) and contained questions about each assessment including the technical quality of the telehealth platform, the most enjoyable and most difficult aspects of the assessment and their overall experience of the platform.
Results*:* More than 100 assessments were completed during the three-month trial, with clinicians reporting that on most occasions, video and audio quality were adequate or better, and that interactions with their child clients were effective. Qualitative data indicated that technical difficulties were a drawback to the assessments, but that ease of use of the assessment, the added functionality of using the assessment within the telehealth platform and the unexpected benefits of telehealth were seen as positive elements.
Conclusions*:* This study adds clinicians' voices to the research into telehealth, indicating that the assessments were generally easy to use, effective and provided an unexpected depth of insight and connection for clinicians and their clients. Future research may consider the voices of other stakeholders in telehealth interactions, including parents and the child clients.
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Telehealth educational assessments in rural and remote schools – perspectives of support teachers

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Background and Objectives: Telehealth may enable remote assessments of children in schools and evaluation of outcomes following intervention. The aim of this project was to evaluate the feasibility of using telehealth in children with reading difficulties in the school setting and obtain the perspectives of teachers supporting the children during the assessment.

Method: Teachers (*n*=57) of 71 primary school age children participated in the study. Teachers provided feedback on the telehealth assessment by completing questionnaires about student's behaviours and the quality of telehealth assessment. Selected teachers (*n*=24) were also invited to a semi-structured interview to provide qualitative feedback.

Results: Telehealth assessments were completed in 93.4% of the sample. Support teachers reported satisfaction with the audio, visual quality and assessment process. A majority of students completed the telehealth assessment with good compliance, engagement and attention.

Conclusions: Telehealth is a feasible tool for objectively measuring outcomes of children following an intervention. Telehealth assessment is also largely accepted by teachers who supported students at schools. Feedback obtained from this study may be used to offer guidance on processes of undertaking telehealth assessments with children at their school.

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Telehealth-delivered neurodevelopmental Assessments in children and adolescents (Tele-Assess): preliminary neuropsychological assessment results

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Background and Objectives: In adult populations, telehealth-delivered neuropsychological assessment results are reported to be largely equivalent to those obtained in face-to-face (FTF) settings. However an evidence base to support the administration and interpretation of standardised paediatric neuropsychological tests is lacking, so far consisting of small samples that are characterised by limited age ranges, clinical presentations, assessment tools, and assessment settings. Tele-Assess aims to address these limitations by examining the reproducibility of neuropsychological assessment outcomes between telehealth and FTF delivered methods within groups of 6- to 15-year-old children.

Method: This is an AB:BA crossover study in two clinical cohorts, children with neurofibromatosis type 1 (NF1) and autism spectrum disorder (ASD), and a typically developing group (TD). Participants completed two identical neuropsychological assessments: one was completed FTF (A); and the other via telehealth (B). Half of participants completed the AB administration order, and the other half the BA order. Measures included the Wechsler Intelligence Scale for Children fifth edition (WISC-V) Full Scale IQ and Index scores, and Wechsler Individual Achievement Test Abbreviated second edition (WIAT-A-2).

Results: To date, complete data have been collected from 15 participants (8 female), including 7 with NF1, 1 with ASD, and 7 TD controls. All participants to date were enrolled in the AB study arm. Mean age at the baseline assessment was 10.8 years (SD=2.2). Mean retest time between assessments was 16 months (SD=4.6). WISC-V Full Scale IQ and Index scores and WIAT-A-2 standard scores were compared between telehealth and FTF assessments using intraclass correlation coefficients (ICC). All variables were strongly correlated (ICC range: .86 to .97, all $p<.001$), indicating very high levels of agreement between FTF and telehealth delivered cognitive assessment results. Retest period did not influence the strength of the associations between FTF and telehealth delivered assessments.

Conclusions: Preliminary results provide encouraging evidence to suggest that neuropsychological assessment results obtained via telehealth delivery are comparable to those derived from FTF assessments. These findings may give clinicians the confidence to administer assessments via teleconferencing.

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Effective communication in neuropsychological assessment reports: teachers' perspectives on the presentation of assessment results

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Background and Objectives: Written reports are the main product of comprehensive neuropsychological assessment, yet little research has investigated how stakeholders such as teachers understand and respond to neuropsychological reports, or what factors may influence understanding. Understanding is likely influenced by the interaction of teacher knowledge, expectation and the written report style. Results sections of neuropsychological reports tend to be jargon-heavy, despite evidence from other fields of applied psychology that indicates simplicity is preferred. The objective of the current research was to investigate teachers' understanding of and preferences for different styles of reporting results, in order to improve neuropsychological report writing.
Method: Thirty-five teachers (31 females, 4 males) were recruited from primary, secondary, and specialist schools across Australia via social media, to complete an online survey. Participants ranked three versions of a set of WISC-V results from most to least preferred. Results were presented as brief dot-pointed strengths and weaknesses, as a traditional narrative description, and as an annotated bell curve/graphical presentation. Participants also provided qualitative responses to the questions "What did you like or dislike about this results section? How could this section be improved?".
Results: All results versions were equally ranked. The traditional narrative example section was rated as more complex than both the shorter, dot-pointed and graphical examples. No differences in ratings were seen based on teaching experience nor experience with specific types of reports. Qualitative analysis showed that issues with style, structure and content were secondary to the desire for overall practicality and accessibility of the report. Teachers expressed a desire to have greater collaboration with neuropsychologists who are assessing their students.
Conclusions: This study provides further evidence that teachers look for information that helps them to relate neuropsychological assessments results to their teaching practice and to the student's ability to learn. Teachers want information to be clearly presented and easily accessible; however, there was no consensus about which format best achieved this. This study suggests that increased consultation and collaboration between teachers and neuropsychologists can enhance the practicality of reports and mitigate issues with how they are written.
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The Contribution of Anxiety to Cognitive and Educational Outcomes in Children with Additional Health and Developmental Needs

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Background and Objectives: Attentional Control Theory proposes that trait anxiety selectively impairs working memory function; in turn, working memory and anxiety are related to reduced educational achievement in childhood. One group of children who may experience high anxiety are children with Additional Health and Developmental Needs (AHDN), who can present with a range of medical, cognitive, academic, and mental health difficulties, and represent approximately 20% of Australian schoolchildren. This study sought to better understand anxiety levels in children categorised as AHDN, and how anxiety may relate to cognitive and educational outcomes in both AHDN and neurotypical children, using the Attentional Control Theory as a framework.
Method: Children with AHDN were compared to an age and non-verbal IQ matched neurotypical sample (n = 50, 5-10 years). All participants completed tests of non-verbal intelligence, vocabulary, literacy, temporal processing speed, and visual and auditory short-term and working memory. Additionally, all participants were categorised according to parent-reported trait anxiety levels.
Results: Children with AHDN were more likely to experience clinically-elevated anxiety compared to their neurotypical peers (odds ratio 11.5). The AHDN group also showed reduced (auditory and visual) short-term and working memory capacities, and poorer literacy abilities, compared to the matched neurotypical group. High anxiety, across both AHDN and neurotypical children, was specifically related to reduced visual working memory (visual digit span).
Conclusions: At a theoretical level, these results add to the literature supporting Attentional Control Theory in a paediatric sample and are among the first to show that anxiety can specifically impact visual working memory. In clinical terms, these findings have important implications for understanding and better supporting the cognitive and educational development of children with higher anxiety levels, especially those classified as AHDN.
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Visuospatial Memory and Vocabulary Relations in School-Aged Children: A Systematic Review and Meta-Analysis

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Background and Objectives: Understanding of the cognitive skills required for typical vocabulary development is limited, despite the fact that 7% of children fail to acquire age-appropriate verbal language and vocabulary skills by the time they start school. The existing literature has focussed primarily on the contribution of auditory-verbal memory to vocabulary development, with little consideration for the role of visuospatial memory. The few studies that have examined visuospatial memory and vocabulary relations have found highly variable results, presumably due to the range of visuospatial memory tasks used. Thus, this study aimed to systematically review the literature investigating relations between visuospatial memory and vocabulary development in neurotypical children, with particular consideration of the types of visuospatial memory tasks used.

Method: Over 5,000 abstracts were screened, and 19 articles met criteria for inclusion in the meta-analysis. Studies were grouped according to the type of visuospatial memory task utilized, with 3 discrete subgroups emerging: spatio-temporal span tasks (11 datapoints), concurrent array tasks (14 datapoints), and executive judgement tasks (3 datapoints).

Results: Grouping studies according to the visuospatial memory task tended to reduce heterogeneity in the results, though not for spatial concurrent array tasks. A moderate association was found between visuo-perceptual concurrent array tasks and vocabulary, while executive judgement and spatio-temporal span tasks showed a weak correlation with vocabulary.

Conclusions: These results highlight a clear association between visuospatial memory and vocabulary, particularly for concurrent array tasks (where visual-perceptual information is presented in an array and can potentially be processed simultaneously). This has important implications for psychologists, speech pathologists, and language research, as interventions to support language learning can be designed to target areas of visuospatial cognition most clearly linked to vocabulary (i.e., processing multiple visuospatial details simultaneously).

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Effects of paediatric sleep disordered breathing on cognition: a systematic review with meta-analysis

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Background and Objectives: Sleep disordered breathing (SDB) involves abnormal respiratory patterns during sleep that influence children's cognitive functions. SDB varies in severity from mild (habitual snoring) to severe (obstructive sleep apnoea; OSA), and is experienced by up to 35% and 5% of the paediatric population, respectively. The primary aim of this study is to determine whether cognitive skills are selectively or globally disrupted in children with SDB. The secondary aim of the study is to establish if cognitive outcomes are moderated by the severity of SDB.

Method: The study was registered with PROSPERO. Database searches were conducted using PRISMA guidelines against strict pre-determined inclusion/exclusion criteria. MEDLINE, SCOPUS, and PsychINFO were searched up until January 2021. The methodological quality of included studies was evaluated using a modified version of the Newcastle-Ottawa Scale. Data was analysed using Comprehensive Meta-Analysis Version 3.

Results: Fifty-seven studies met our inclusion criteria. The studies involved 4987 children with SDB and 3520 healthy controls. Criteria used to classify SDB severity varied between the studies. The quality analysis revealed that most studies were of a medium to high quality. The meta-analysis showed that children with SDB performed significantly worse than healthy control children on tests of intelligence (FSIQ, PIQ and VIQ), attention, fluency, problem solving, processing speed, visual spatial skills, language and verbal memory, but not on tests of inhibition, working memory, procedural memory or visual memory. Effect sizes were small to moderate. There was no consistent evidence of dose-response relationship between severity of SDB and cognitive outcomes across domains. While on tests of visual spatial skills, greater severity of OSA was associated with lower test scores, on tests of verbal intelligence only the moderate (but not mild) OSA and primary snoring were associated with lower test scores.

Conclusions: Our study provides evidence of selective cognitive deficits in children with SDB. Our study, however, does not provide evidence of a clear dose response relationship between SDB and cognition, which may in part be due to the lack of uniformity in demarcation of SDB severity.

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Factor Structure of the Parent and Child Memory Questionnaires: Exploratory Factor Analysis with Typically Developing Children

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Background and Objectives: Standardised memory tests provide detailed measurements of memory skills but often have little or no correspondence with reported memory problems experienced by children in daily life. The Child Memory Questionnaire (Child MQ; Kadis, Stollstorff, Elliott, Lach & Smith, 2004) and Parent Memory Questionnaire (PMQ; Vrizen & Smith, 1996) were developed to assess children's memory functioning in daily activities. While both questionnaires have been used in research, their validation has been limited, and factorial structure has not been established. The primary aim of the present study was to establish factor structures of the Child MQ and PMQ. The secondary aims were to examine cross-informant reliability and further validate questionnaires against objective memory tests.
Method: Typically developing children (n=239; 113 females; M age=12.3 years, SD=2.6, range=7.0-17.0 years) and their parents (n=306; 149 females; M age of child=10.6 years, SD=3.1, range=5.0-17.0 years) completed the Child MQ and PMQ, respectively. Children completed standardised and experimental verbal memory tests that assessed working memory, immediate recall, and recall after short (2min, 30 min) and long (7 day) delays.
Results: Exploratory factor analysis (Principal Component Factoring with Promax rotation) yielded (i) four factors (Forgetting, Prospective Memory, Retrieval, Episodic Memory) that accounted for 40.6% of the variance of the Child MQ, and (ii) two factors (Forgetting, Remembering) that accounted for 49.3% of the variance of the PMQ. The Child MQ and PMQ total scores correlated with the Digit Span Forward (r(110)=.27, p=.01 and r(110)=.22, p=.033, respectively). The Child MQ Prospective Memory and Retrieval factors correlated with the Digit Span Backward (r(109)=.22, p=.033), and recall of words on long, 7-day delay (r(89)=.22, p=.053) respectively. While the PMQ and Child MQ total scores correlated (r(239)=.44, p<.01), children rated their memory as significantly poorer than their parents, t(186)= 6.16, p<.001.
Conclusions: The present study revealed different factorial structures of the Child MQ and PMQ. Correlations with objective memory tests were limited, but more frequently found for the Child MQ. Child and parent ratings of memory problems were moderately correlated. Taken together, our findings suggest that administration of multi-informant questionnaires may be complementary to objective memory tests in children's memory evaluation.
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Session 15

Cognitive outcomes in children with mild traumatic brain injury: Subtest performance on the National Institutes of Health Toolbox Cognition Battery

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Background and Objectives: The study sought to delineate cognitive outcomes following pediatric mild traumatic brain injury (TBI) using the NIH Toolbox (NIHTB) Cognition Battery, which has not yet been used in this population. Performance on the individual subtests of the NIHTB Cognition Battery were examined.
Method: Children ages 8-15 with mild TBI (n=143) or mild orthopedic injuries (OI, n=74) were recruited in the Emergency Departments of two large children's hospitals within 24 hours of injury. Participants completed the NIH Toolbox Cognition Battery within 15 days of injury and at 3- and 6- months post-injury. Mixed model analyses examined group and time since injury as predictors of age-adjusted standard scores on the seven individual subtests of the Cognition Battery. Socioeconomic status and sex were included as covariates in analyses. Sensitivity analyses were conducted by repeating analyses after omitting children who demonstrated invalid performance on the Medical Symptom Validity Test (MSVT).
Results: The mild TBI group showed significantly lower scores on subtests measuring attention and executive function (e.g., cognitive flexibility, inhibitory control) than the OI group but not on other fluid cognition subtests (e.g., working and explicit memory, processing speed). Specifically, the mild TBI group scored significantly lower on the Dimensional Change Card Sort Test (DCCS; main effect $p = 0.045$) and the Flanker Inhibitory Control and Attention Test (main effect $p = 0.048$). The magnitude of these deficits decreased over time, although group difference on the DCCS remained significant at the 3-month post-injury assessment. No group differences were observed on subtests assessing crystallized cognition (i.e., oral reading recognition, picture vocabulary). The pattern of results remained similar when children who demonstrated invalid MSVT performance were omitted from analyses.

Conclusions: The results build on previous findings suggesting that children demonstrate persistent deficits in fluid cognitive abilities following mild TBI by further delineating the nature of these cognitive difficulties. The results suggest that attention and executive function deficits may persist over time and that the NIHTB Cognition Battery may be a sensitive measure for detecting these deficits after pediatric mild TBI.
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Recovery after Severe Traumatic Brain Injury: Return to Life and Work as a Physiotherapist

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This talk will centre on the lived experience and recovery of Ché Phillips. After graduating from Griffiths University on the Gold Coast in 2008 with a double degree of Physiotherapy (Hons) and Exercise Science, Ché suffered a traumatic brain injury (TBI) in late 2009, characterised by a severe diffuse axonal injury (DAI). The accident occurred while riding a motorbike down Springbrook Mountain on the Gold Coast; he fell 40 meters off the side of a cliff.
Though he has no personal memory of the subsequent two-months in a coma, with only emerging memories of the remaining six-months spent in hospital, this talk will account his personal narrative, alongside that of his family and friends, detailing his recovery. After two years, he remarkably returned to his life and work as a Physiotherapist. In light of his personal experiences and rehabilitation, his career focus changed to focus on ABI/TBI clients. He will discuss the unique experiences he gained first as a patient, and now as a therapist treating Community based ABI/TBI around the world, including the Gold Coast, Melbourne, London, UK and in Christchurch, New Zealand.
Ché's story is one of great personal motivation and support from his family and rehabilitation team. As returning to work following a moderate-severe TBI is frequently a definitive goal in community rehabilitation, we know from research that returning to pre-injury employment can be a challenge, with up to 80% of individuals not working at two years after a moderate-to-severe TBI (Sandhaug et al., 2015). He will discuss the importance of his journey and return to work, which has marked impacts on quality of life, societal roles, contribution to society and one's sense of purpose.
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A review of the insider experience of close personal relationships following stroke

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Background and Objectives: Psychosocial difficulties are among the most pervasive and challenging issues for people following stroke. Relationship challenges are frequently reported and this is relevant given the association between interpersonal relationships and quality of life, rates of depression and stroke recovery. The aim of this study was to collate and thematically analyse literature describing the experience of interpersonal relationships from the perspective of stroke survivors.
Method: Using a scoping review methodology, four databases (CINAHL/EBSCO, MEDLINE/Pubmed, Embase, Psychinfo) were systematically searched yielding 3009 citations. Following screening against inclusion criteria at title / abstract and full text levels, 43 articles were included in the review. Relevant data were charted and thematically analysed.
Results: Although research relevant to interpersonal relationships has increased since 2000, much of the data has been derived indirectly from exploration of related constructs. In addition, longitudinal designs are relatively few with most of the research evidence reflecting cross-sectional findings. Four overarching themes and 11 subthemes were identified. 'Social disruption' described changing social worlds, lost social opportunities and shrinking networks. 'Changed relationships' included changed family and spousal relationships and parenting challenges. The third theme 'relationships help' highlighted positive aspects including a sense of belonging, support and a life worth living. The final theme was 'coping with an altered social world' and described adjustment processes and emotional responses.
Conclusions: Relationships are an important aspect of life post stroke but are subject to changes and challenges. Further research, in particular longitudinal research, is needed to understand changes over time and how clients can be best supported to maintain and develop positive relationships following stroke.
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Vocational rehabilitation following acquired brain injury: a systematic scoping review

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Background and Objectives: Acquired brain injury (ABI) is a complex injury which can affect engagement

with worker roles. Return to work rates for individuals with brain injury are low, with those who do return to work frequently reporting job instability. While vocational rehabilitation (VR) can improve return to work rates and job stability, service provision is varied, with no gold standard identified. To support the development of a contextual VR framework for early community ABI rehabilitation service, this study aimed to identify features that would translate to clinical practice by examining current models, processes and components of vocational rehabilitation for ABI.
Method: A systematic scoping review of the literature was conducted to investigate research activity in the area of VR for individuals with ABI to address three research questions: What models have been identified to underpin VR in ABI? What clinical processes have been identified to guide provision of VR in ABI? What components of VR have been described and / or recommended in the ABI literature?
Results: Forty-eight articles were reviewed. From these articles, 15 models which underpin ABI VR, 9 clinical processes, 8 components of the VR process and 4 service delivery components utilised in provision of acquired brain injury vocational rehabilitation were identified.
Conclusion: Vocational rehabilitation for individuals with brain injury involves a complex interaction of factors. Consideration needs to be paid to not only the person and their abilities but also the work environment (physical, social, cultural) and job task demands. Vocational rehabilitation services should be provided by a coordinated interdisciplinary team and involve active stakeholder engagement. Services should be accessible and well timed. Findings from this study may be used to inform service provision across a range of time points and support clinicians in their delivery of vocational rehabilitation to adults with brain injury.
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Return to work for stroke survivors with aphasia: Preliminary findings of a scoping review

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Background and Objectives: Return to work (RTW) is a key rehabilitation goal following stroke in survivors of working age, including those with aphasia (an impairment of language production and/or comprehension). Successful transition back to work one year post onset is highly variable (35-75%) across studies and there is limited information describing re-employment rates for individuals with aphasia. This scoping review aimed to synthesize current research evidence and highlight literature gaps related to work re-entry for stroke survivors with aphasia to (1) explore RTW outcomes; (2) document vocational-language assessment and interventions; and (3) collate RTW experiences of people with aphasia and clinicians.
Method: Key terms were systematically applied in multiple databases (PubMed, EMBASE, PsycINFO, Web of Science and CINAHL) from commencement until 08.08.2020 with reference to the PRISMA extension for Scoping Review guidelines. Articles in English were selected if they included adults with post-stroke aphasia employed pre-onset AND any of the following terms (1) RTW; (2) vocational rehabilitation or outcomes; (3) employment outcomes in research exploring social participation; and (4) work-focussed communication assessment or intervention.
Results: Of 32,970 studies identified, 18,417 were eligible for title and abstract screening. A further 368 duplicates were detected during screening and 17,321 articles were deemed ineligible. Following full text appraisal of 728 articles, 39 quantitative and 23 qualitative papers were included. Independent data extraction by two reviewers is in progress. Emerging themes include (1) people with aphasia have inferior re-employment outcomes with variability evident between studies (0-64%); (2) nil evidence informing vocationally focussed aphasia assessment or interventions; (3) paucity of literature describing the impact of cognitive deficits in this population, and (4) no studies describing work stability rates.
Conclusions: There is limited evidence available to inform clinical practice targeting vocational-language assessment, and intervention for people with aphasia to maximize employment outcomes. This large scoping review provides a comprehensive evaluation of vocational outcomes in people with aphasia. Qualitative thematic analysis of consumer perceptions of the RTW experience will provide further insights not previously documented and will inform future clinical research priorities.
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Efficacy of memory training for multiple sclerosis: A multiple-baseline single-case study

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Background and Objectives: Multiple sclerosis (MS) is a neurological condition where 40-70% of people with

MS experience cognitive problems including difficulties with memory, leading to increased difficulties socialising and in the workplace. The Making the Most of Your Memory (MMYM) program has been validated in people with epilepsy and stroke, and neurology outpatients. The purpose of this study was to explore the efficacy of the MMYM program for people with MS who experience everyday memory complaints.

Method: A multiple-baseline single-case experimental design was implemented to account for variability of symptom severity in relapsing-remitting MS (RRMS). Tiers were across participants (n=3), with baseline lasting four, six and eight weeks respectively before the commencement of the memory training program. Assessments, including objective and subjective measures of memory and self-reported mood symptoms, impact of fatigue and MS symptoms were conducted fortnightly throughout the baseline and intervention periods. The final assessment was conducted two weeks post-intervention.

Results: Improvements on a list-learning task and self-reported memory performance were seen for all participants on visual analysis of the graph. Weighted Tau-*U* across participants was significant for these measures (*p*<.05), with a very large effect size (.89) on immediate recall performance, a large effect size (.77) on delayed recall performance and a moderate effect size (.39) on self-reported memory performance. Reliable improvement in prospective memory was also seen at follow-up for two participants. Reductions for at least one participant were shown on visual analysis and Tau-*U* in self-reported mood symptoms, impact of fatigue and MS symptoms. Interestingly, one participant experienced a significant reduction in depressive symptoms (Tau-*U* *p*<.05) during the intervention period compared to baseline with a very large effect size (-1).

Conclusions: This study provides initial evidence that people with RRMS benefit from the MMYM program. While areas of improvement can vary between individuals, those with more severe initial scores are also able to make considerable improvements.

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Adaptation of the Brain Injury Questionnaire of Sexuality into Bangla and initial findings from a sample of Bangladeshi traumatic brain injury patients

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Context and objectives: Bangladesh is an over populated country with a high incidence of traumatic brain injury (TBI) for which neuropsychological services are only just emerging. In this context the present study undertook in a culturally sensitive manner to translate into Bangla (Bengali) the Brain Injury Questionnaire of Sexuality (BIQS) (Ponsford, 2003; Stolwyk *et al* 2013), and to present findings from a sample of TBI patients.

Methods: Standard procedures for scale adaptation were followed (translation, synthesis, feedback from clients, expert opinion, back translation). The Bangla version of the BIQS (BIQS-B) and the Relations Assessment Scale (RAS) were completed by 30 TBI patients and a sample of 53 healthy persons in an intimate relationship (mean age 31.7 and 34.9 years respectively, 85% male, reflecting the demographics of TBI in Bangladesh). Due to infrastructure issues in a country such as Bangladesh and pandemic considerations, data were collected by telephone interview for the clinical sample and by online survey for the healthy controls.

Results: Factor and principle component analysis of the BIQS-B yielded three components as in the original scale (sexual functioning, relationship quality and self-esteem, and mood) explaining 75.3% of the total variance. Reliability is satisfactory, matching that of the English version, Cronbach's alpha for the total score being .92 (.94, .84 and .91 for the three subscales respectively). Total score on the BIQS-B correlated significantly with the RAS (r=.37; p<.02) a relatively modest figure because although two of the subscales, relationship quality and self-esteem and mood, correlated significantly with the RAS (r=.48 and .52 respectively, p<.01), sexual functioning did not (r=.15, *ns*). The TBI sample scored lower on the BIQS-B than did the healthy controls by virtue of not reporting the positive changes in sexuality over time that the healthy controls reported (means of 43.90 *vs* 52.02, p<.001).

Conclusions: In a very different culture, one in which there are particular sensitivities with regard to discussing intimate matters, the factor structure of the BIQS-B is in fact similar to the English version and has acceptable reliability and validity for the measurement of sexual functioning, quality of relationship and self-esteem and mood as related to sexuality, hence contributing to the goal of improving access to services not just in Bangladesh but in Bangla speaking minority ethnic groups in other countries.

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Neuropsychological Test Performance in a Non-clinical Multilingual Group of South African Children with Advantaged and Disadvantaged Education

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Background and Objectives: South Africa has a multilingual population exposed to extreme diversity of educational opportunity, creating challenges for

valid neuropsychological assessment. This study aimed to collect normative data for school-aged children from advantaged and disadvantaged educational backgrounds on a battery of neurocognitive tests.
Method: Non-clinical participants aged 8-18 years were tested on the Bell Cancellation – Speed and Omissions, Coin Rotation, Digit Span, Dot Counting, Five Point, Luria Three-Step, Modified Taylor Complex Figure (MTCF), Rey Auditory Verbal Learning, Rey 15-Item, Symbol Digit Modalities – Alternate Form C, Trail Making Parts A & B and Category, Phonemic, Verb/Action and One-Minute-Any-Words verbal fluency tests. Tests were administered in the children's first language by trained psychologists fluent in the various languages. The sample included 302 participants in four age groups (8-10, 11-13, 14-15 and 16-18 years), further stratified for quality of education (advantaged education, *n* = 139; disadvantaged education, *n* = 163). Quality of education was defined in accordance with the South African school quintile ratings, where well-resourced 'advantaged' schools are clearly distinguishable from poorly resourced 'disadvantaged' schools. T-tests were used to compare test performance between advantaged versus disadvantaged subgroups.
Results: The children with advantaged quality of education outperformed the children with disadvantaged quality of education on all the tests with the exception of the Bell Cancellation Test - Omissions, the Coin Rotation Test, Longest Digit Span Forward, Luria Three-Step Test and MTCF where the scores were not significantly different.
Conclusions: The present research supports the importance of taking quality of education into account with appropriate normative data to avoid erroneous test interpretation. Possible reasons for resilience to the deleterious effects of educational disadvantage on a limited number of the tests are proposed. However, these are preliminary indications that warrant further investigation with larger samples.
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Examination of the Validity of the 'Papadum Test': An Alternative to the Clock Drawing Test for People with Low Levels of Education/Literacy

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Background and Objectives: The prevalence of dementia is increasing in low/middle income countries (LMIC) due to increases in life expectancy. Valid screening tools to aid diagnosis and intervention are required. Well established tools, such as the Addenbrooke's Cognitive Examination III (ACE III), include a clock drawing test (CDT). However, a certain level of education and familiarity with writing numbers are required to complete this task. A paucity of research exists regarding validation of screening and assessment tools for low educated or illiterate populations in LMIC. The Pizza/Papadum test was developed by our group to examine similar cognitive domains to the CDT without the need for literacy skills. Participants are given a circle of paper and asked to imagine it is a Pizza/Papadum and to show how it would be divided equally among six people. Extending previous research (Manoj et al., 2015) this study examined the validity of the Papadum Test in an Indian population. This study examined the influence years of education has on performance on the CDT and the Papadum test and the correlation between the two tests. In addition, diagnostic accuracy for each test was examined.
Method: 89 healthy adults and 59 adults with a diagnosis of dementia from hospitals in Kolkata, undertook the ACE III (including CDT) and the Papadum test.
Results: Education had a significant association with the CDT (rho =.507) but not with the Papadum test (rho =.054). Across the whole sample there was a significant correlation between CDT and Papadum (rho=.304) but not within separate groups of healthy controls (rho =-.038) and patients (rho=0.159). Diagnostic accuracy for CDT (AUC=.794) was similar to that for Papadum (AUC=.782).
Conclusions: Results highlight the strong influence that education has on CDT performance indicating that it may not be suitable for those with low levels of literacy. The Papadum test could provide a viable alternative as a screening tool to the CDT for use with people who are illiterate or have low levels of education. Further validation studies are required, however.
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Executive Functioning Assessment with Aboriginal and Torres Strait Islander Australians

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Background and Objectives: Reduced executive functioning (EF) abilities are a strong predictor of general daily living challenges, low educational attainment and career outcomes, and mental health conditions. Early and accurate assessment of EF abilities can assist in quantifying strengths and weaknesses to support appropriate interventions. However, the accuracy of EF assessment tools and procedures with Aboriginal and Torres Strait Islander Australians is yet to be determined.
Method: A critical narrative review of the literature

considering the need for and current state of EF assessment with Aboriginal and Torres Strait Islander Australians was conducted.

Results: Aboriginal and Torres Strait Islander peoples are at an increased risk of developing attention deficit hyperactivity disorder symptoms, traumatic brain injury, stroke, dementia and other disorders. Individuals exposed to early life disadvantages, such as low SES, sole-parent upbringing, and poor childhood health, are at a greater risk of reduced EF across the life course, with EF problems likely to impair real-world functional outcomes at each stage of life. Clinicians indicate the complexity in using assessment measures cross-culturally with Aboriginal and Torres Strait Islander Australians. Research has applied community-based approaches to adapt, modify or develop cognitive assessment tools that may offer a limited assessment of EF.

Conclusions: There remains a lack of consensus regarding the validity and cultural appropriateness of EF tools for use with Aboriginal and Torres Strait Islander Australians. Future studies should focus on validation of assessment measures to ensure a robust assessment of EF is obtained for Aboriginal and Torres Strait Islander peoples to support diagnosis and support planning.

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The Impact of Childhood Adversity and Lifespan Trauma on Decision-Making and Theory of Mind Abilities in Homeless and Precariously Housed Adults

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Background and Objectives: Childhood adversity and ongoing trauma exposure is increasingly recognized for its significant impact on both mental and physical well-being across the lifespan. These negative experiences (physical and sexual abuse, emotional neglect, adverse home environment) have been linked to a range of poor outcomes including elevated risk of homelessness and substance use in adulthood. Moderate to large negative effects of childhood adversity on cognition have been reported, but it is mostly limited to studies of attention, memory, and executive functioning. The current study extends this work by examining the effects of childhood adversity and lifespan trauma on social cognitive processes, including affective decision making and theory of mind (ToM) abilities.

Method: Participants included 258 `homeless and precariously housed adults (mean age = 40 years, 78% male) living in an impoverished neighborhood of Vancouver, Canada. All participants underwent full psychiatric and cognitive assessments at study entry. The number of types of trauma exposures across the lifespan (physical and sexual abuse, crime-related, disaster) were obtained by the Trauma History Questionnaire (THQ). The Childhood Abuse and Neglect (CAN) questionnaire total score was used to index adversity in the childhood home environment. Affective decision-making in the context of reward was measured using the Iowa Gambling Task (IGT), and ToM ability was assessed with the Reading the Mind in the Eyes Test (RMET). Multiple linear regression analyses were used to examine associations between adversity and trauma indices and cognitive outcomes, adjusting for demographics.

Result: Higher THQ total scores were associated with higher RMET scores (β =.20, p =.019), but not with IGT scores (β =.12, p =.096). CAN scores were not associated with either RMET (β =.01, p =.887) or IGT (β =-.01, p =.904) performance. Supplementary analyses indicated a lower mean THQ score in persons with schizophrenia or schizoaffective disorder, but cognitive scores did not differ.

Conclusions: Contrary to expectation, a greater number of types of traumatic exposures across the lifespan was associated with better ToM ability. Psychiatric illness was associated with lower rates of trauma exposure and may in part explain this counterintuitive finding. More research is needed to better understand how trauma and comorbidities interact to influence cognitive outcomes in this complex population.

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The Relationship Between Length of Hospitalization, Mood, and Cognition in Recovered COVID-19 Patients

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Background and Objectives: Currently, over 105 million people worldwide have been diagnosed with COVID-19. Emerging research indicates that patients hospitalized with COVID-19 experience higher levels of depression, anxiety, and executive and visuospatial dysfunction compared to controls. The aim of this pilot

project was to explore the relationship between length of COVID-19 hospital stay (LOHS) and self-report of psychological and cognitive symptoms.
Method: Our sample consisted of 68 adults who were treated at Staten Island University Hospital for COVID-19. Participants were contacted by phone, 2-6 months post-discharge, and administered a short battery of screening measures. The protocol included the Generalized Anxiety Disorder-2, Patient Health Questionnaire-2, Primary Care PTSD Screen for DSM-5, and Quality of Life in Neurological Disorders (Neuro-QoL). Spearman's rank-order correlation was utilized to measure associations with ordinal data, while point-biserial correlation was utilized for associations between dichotomous and continuous variables.
Results: LOHS ranged from 2 to 30 days ($\bar{x}$=8 days) and was not correlated with any psychological or cognitive symptoms. NeuroQOL (Cognitive T-score), in which higher T-scores indicate better cognitive quality of life, was negatively correlated with feeling on edge ($\rho=-0.43$), uncontrollable worrying ($\rho=-0.28$), anhedonia ($\rho=-0.51$), feeling down or hopeless ($\rho=-0.53$), nightmares ($r_{pb}=-0.44$), avoiding thoughts ($r_{pb}=-0.39$), hypervigilance ($r_{pb}=-0.31$), emotional numbing/detachment ($r_{pb}=-0.60$) and guilt/self-blame ($r_{pb}=-0.29$). NeuroQOL was not associated with hope for the future.
Conclusions: Results suggest that LOHS may be a poor proxy for COVID-19 illness severity, or that severity is not related to self-report of cognitive and psychological symptoms. Results also indicate a significant association between psychological and cognitive symptoms. In particular, emotional numbing is strongly associated with increased cognitive complaints. Such findings highlight the importance of measuring post-COVID mood symptoms, as they are associated with cognitive difficulties. Future studies should investigate the relationship between cognitive and psychological symptoms in a larger sample of recovered COVID-19 patients, perhaps by incorporating objective measures of cognition. Such information will inform treatment for recovered COVID-19 patients who continue to experience prolonged neuropsychological sequelae.
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Vitamin D Receptor Mutations Influence on Course of Parkinson's Disease in Patients Treated With Levodopa

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Background and Objectives: Parkinson's disease (PD) is second most often occuring neurodegenerative disease after Alzheimer's disease. Vitamin D(VD) is steroid hormone crucial for calcium homeostasis and bone metabolism. VD metabolism is multi-factorial process which involves specific enzymes of liver and kidneys with 1,25- D3 being active product. Latest research indicates that VD modulates over 1000 genes involved in cellular growth, protein synthesis and immunological processes. Several animal studies showed potential protective attributes of VD in dopamine cells. The aim of the study was to search for the conncections between VDR gene mutations and course of PD development.
Method: Sequential analysis of VDR gene was performed on genomic DNA isolated from peripheral blood leukocytes of 100 patients with diagnosed Parkinson's Disease treated with Levodopa. Sequencing was performed in 3130xl Genetic Analyzer(Applied Biosystems) and statistical analysis was conducted using AB DNA Sequencing Analysis Software v. 5.2.(Applied Biosystems). We have also performed tandem mass spectrometry(LC-MS / MS) of Vitamin D metabolites.
Results: From analyzed VDR gene fragments splicing region of exon 1 turned out to be the most interesting one. Mutation of "start"(ATG) codon was detected in most cases. In examined patients C/C genotype was present 32 times, C/T 53 times and T/T 23 times. Patients in research group had statistically significant prevalence of SNP. We found that dominant C/C alleles showed statistically earlier average age of diagnosis. In addition, the presence of each subsequent T allele significantly delayed the onset of the disease ($p = 0.014$). The T/T genotype could have also extended the time from diagnosis to the implementation of l-dopa treatment, but data did not reach statistical significance ($p = 0.07$) We have also connected C/T genotype of rs2228570 variant with higher chance of levodopa-induced dyskinesias. Detected metabolites concentrations also further underline this connection
Conclusions: We conclude that VDR gene mutations may influence the course of Parkinson's disease. Widely advised Vitamin D supplementation may not have expected impact on course of Patients with such changes
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ECT DVD: Let's Talk About It!

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Background and Objectives: Electroconvulsive therapy (ECT) has a poor public image which is largely due to the negative portrayal of ECT in movies (in particular, *One Flew Over the Cuckoo's Nest*, 1975). Unfortunately, formal video sources provided by health organisations are often poorly produced. They generally use actors instead of genuine consumers, the acting is over-the-top, the doctors are stereotyped (e.g. wearing white laboratory coats), and the information provided doesn't adequately cover side effects such as memory impairment. A collaborative, consumer-led project completed at the Concord Centre for Mental Health identified the need for better ECT resources that were easy to access and provided by mental health professionals.

Aim: The first aim of this project was to create an information resource that was factual, in plain language and gave a balanced view of ECT that would inform patients during the consent process and reduce stigma surrounding ECT. The second aim of this project was to evaluate the efficacy to which this video met the needs of consumers, relatives and health professionals. Participants were invited to answer a short questionnaire before watching the video and again immediately afterwards to evaluate whether the video improved their knowledge and attitudes about ECT.

Results: The production of an ECT information DVD from a multidisciplinary team (including psychiatrists, a nurse and an anaesthetist), subjective narratives of people with lived experience of ECT, and subjective experiences of their relatives was a primary result of this project. Although data collection to evaluate its efficacy is ongoing, results thus far suggest knowledge and attitudes towards ECT have changed after viewing the ECT DVD.

Conclusions: A video was produced to directly address the gap in clinical care and information delivery as identified by mental health consumers. The video is available to patients, their relatives and health professionals and has shown promise in improving knowledge and attitudes towards ECT.

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Session 16

Acceptance and Commitment Therapy for people with acquired brain injury

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Synopsis of session

This "how to" session will focus on treating anxiety and depression symptoms following acquired brain injury (ABI) with Acceptance and Commitment Therapy (ACT). ACT is a third wave behavioural therapy which primarily does not focus on symptom reduction but on the improvement of psychological flexibility. The improvement in psychological flexibility is done through the six core components of ACT (i.e. cognitive defusion, self as concept, acceptance, mindfulness, values, and committed action).

The "how to" session will provide a basic explanation on ACT and the current empirical evidence of the effectiveness of ACT for ABI patients. Furthermore, the core processes will be discussed and how they fit with problems as experienced by one third individuals living with the consequences of ABI. Experiences of the BrainACT study (researching the effectiveness of ACT for ABI patients) will be discussed. Instructions on possible adaptions in the application of ACT for potential cognitive problems of people with ABI will be given. The possibilities of providing ACT through telehealth will also be discussed.

The last part will focus on the BrainACT Australia study, which is a collaborative research between Maastricht University, UWA, and MindLink Psychology. This will include possible cultural and health system differences and factors that may need consideration when treating patients in the Australian context.

Level aimed for: Basic, some knowledge of ACT is recommended. Aimed towards psychologists working with people with ABI and providing (neuro)psychological interventions.

Learning objectives: - Understanding the relevance and applicability of ACT as a therapeutic approach in neuropsychological treatment for people with ABI living in the community.
- Considerations for adapting ACT to the needs and possible cognitive problems of individuals with ABI.
- Using ACT as an intervention tool for treating psychological distress following ABI.

Biographies: Johanne Rauwenhoff is a PhD candidate at Maastricht University and the Limburg Brain Injury Centre. Her research focusses on the treatment of mood complaints following acquired brain injury. Currently, she is conducting the BrainACT study which is a randomised controlled trial researcher the effectiveness of ACT for psychological distress following ACT. Prior to her PhD she completed the research master Neuropsychology at Maastricht University and did a clinical internship at de medical psychology department of Zuyderland Medical Centre.

Dr Pascalle Bosboom (PhD) is a Consultant Clinical Neuropsychologist and Director at MindLink Psychology (WA, Australia), with over 25 years' experience in a broad range of neuropsychological services for adults with known or suspected neurological and/or psychiatric conditions in a variety of settings. She completed her PhD at UWA School of

Psychiatry and Clinical Neurosciences. Pascalle is involved in neuropsychological assessments and interventions, particularly for people living with the consequences of ABI in the WA community, supervision, education and research, including introducing translational research in neuropsychological intervention/treatment programs new to WA, including the collaborative BrainAct study with University Maastricht, The Netherlands, UWA and MindLink Psychology.
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How to incorporate interactional cycles into behaviour assessment and management after acquired brain injury: beyond ABC

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Synopsis of session:
Acquired brain injury (ABI) is associated with a range of long-term cognitive and behavioural outcomes, impacting not only the individual with ABI, but also the interactions and relationships within their family unit. While commonly used linear frameworks, such as Antecedents-Behaviour-Consequences (ABC) are powerful, they often fail to capture the complexity of the family relationships and the repeated patterns within family interactions that can either promote or undermine positive behaviour following ABI.

This session will describe the use of interactional cycles as a more dynamic way of understanding behaviour post-ABI, drawing from family therapy theory and practice. Case examples will be used to demonstrate how this approach can be used to help family members identify patterns in their own behaviour, empowering them to generate strategies to disrupt the behavioural patterns that maintain conflict. The benefits of applying this approach in ABI behaviour work will be discussed, as well as some of the challenges and pitfalls we have experienced in learning and implementing this approach with our clients.
Level aimed for: Intermediate, Experienced
Learning objectives:

1. Understand the theoretical principles of interactional cycles within family systems
2. Learn how to track interactional cycles that contribute to challenging behaviour
3. Learn how to interrupt these patterns to promote positive behaviour

Biography:
Genevieve McMahon has been working as a neuropsychologist for 30 years in a range of adult and paediatric rehabilitation settings in Melbourne and Albury. Most recently, she has been working with Diverge Consulting, supporting children and adults with ABI within their family and community systems throughout metropolitan Melbourne and regional Victoria. Over the last year, she been undertaking further study in family therapy as a means of better understanding and working with the complexity that characterises behaviour and relationships after acquired brain injury.
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Session 18

What do we know about the maintenance of therapeutic effects in people with chronic aphasia? Implications for clinical practice

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Background and Objectives: Intensive aphasia intervention programs have recently been promoted as best practice for post-stroke chronic aphasia. Yet, it is unclear whether all participants benefit and if they do how long therapeutic effects last. For an aphasia therapy program to be judged clinically effective there must be both significant immediate improvement and maintenance effects. Thus, the long-term preservation of therapeutic effects should have become a critical aspect in evaluating therapy effectiveness. However, to date, maintenance has received very little attention in aphasia rehabilitation research and clinical practice.
Method: Four major research databases were searched up to December 2020 for studies investigating the effects of behavioural intensive aphasia therapy programs for adults with chronic aphasia. Forty-four studies (n=670) comprising group and single-subject experimental designs met the inclusion criteria. We carried out meta-synthesis to explore individual therapy response rates and maintenance of therapeutic gains by calculating and analysing the Standard Error of Measurement and Minimal Detectable Change metrics for six common outcome measures.
Results: We found that reporting on maintenance in the aphasia literature is very limited. Only 44/104 of studies meeting the criteria incorporated follow-up

assessments, of which merely 25% evaluated beyond 12 weeks post-treatment. The individual analysis showed that only 22% of intensive aphasia treatment program participants responded and maintained their therapy gains over time.
Conclusions: The variable and low rates of individual treatment response given current therapy doses requires research and clinical attention, with rates of maintenance of therapeutic effects being particularly low. We will discuss potential factors impacting maintenance and their clinical implications.
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Comparison of Constraint Induced Aphasia Therapy and Multi-Modality Aphasia Therapy at a Low-Moderate Intensity – A Substudy Randomised Controlled Trial

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Background and Objectives: Constraint Induced Aphasia Therapy Plus (CIAT Plus) and Multi-Modality Aphasia Therapy (M-MAT) are two treatments for aphasia with considerably different rationales. In research, both treatments are typically provided at a high intensity schedule (30 hours over two weeks) yet such a schedule is unfeasible for most clinical settings. A previous review found no high level evidence directly comparing the two, despite promising evidence of their individual effectiveness. This trial aimed to compare CIAT Plus and M-MAT at a low-moderate intensity and to confirm the effectiveness of each treatment for people with chronic stroke-related aphasia.
Method: This study was a single-blinded, randomised controlled trial comparing CIAT Plus and M-MAT at a low-moderate intensity of 30 hours over five weeks. It formed a substudy of the larger COMPARE trial (n=216). Participants were recruited following completion of the Usual Care arm of the COMPARE trial and then randomised to CIAT Plus or M-MAT in this substudy. Fidelity of both treatment and blinded assessment were ensured through an integrity monitoring and feedback system. Assessments occurred at two baselines, post intervention and 12 week follow-up.
Mixed repeated-measures ANOVAs were used to examine the primary outcome (Western Aphasia Battery-Revised Aphasia Quotient) and secondary outcomes (naming of treated items, activity/participation and quality of life outcomes) between and within groups. Predictors of individual response to treatment were also examined using correlations.
Results: A total of 26 participants (10 CIAT Plus, 16 M-MAT) completed intervention and assessments, with lower recruitment than anticipated due to COVID-19. Results will provide comparative data on the effectiveness of CIAT Plus and M-MAT at an intensity more feasible in clinical practice.
Conclusions: Less intense delivery of evidence-based intensive aphasia interventions may offer greater opportunity for clinical implementation. This study contributes new evidence to this question and explores variability in treatment response between individuals at a lower intensity to previous studies.
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How do speech pathologists assess and treat spoken discourse after TBI? An international survey of clinical practice.

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Background and Objectives: Spoken discourse (e.g. telling anecdotes, conversational exchange) is commonly affected after traumatic brain injury (TBI). INCOG and ANCDS guidelines recommend prioritising discourse-level skills in cognitive communication management. However, previous literature has reported on the challenges in managing discourse clinically, and little is known on how speech pathologists assess and treat discourse after TBI. This study aimed to investigate current speech pathology practice to determine the alignment of clinical practice with research evidence and recommendations.
Method: This online survey, distributed via Survey Monkey, consisted of 30 closed and open-ended questions on demographics, discourse assessment, analysis and treatment, including materials and

methods used and rationales for decision making. Participants were recruited through national and international speech pathology professional bodies, TBI-specific or speech pathology special interest groups and social media. Survey responses were analysed using descriptive statistics, with free text included to support individual responses.

Results: There were 70 completed surveys included in the study. Participants were from Australia, the United States and the UK; most had a primarily clinical role. Nearly half the participants had over 11 years experience working with adults with TBI and a quarter over 20 years. All speech pathologists reported that they regularly evaluated discourse ability of people with TBI, most commonly during spontaneous conversation or with a personal narrative task, and typically collected 3-4 discourse samples. Discourse intervention approaches mostly targeted client self-monitoring ability, social skills or conversational partner training. Practice varied dependent on setting, with more speech pathologists in community or outpatient services undertaking discourse assessment and treatment than in hospital settings.

Conclusions: Overall, speech pathologists' management of spoken discourse aligns with recommendations in the literature, incorporating an individualised, goal-based approach. Factors affecting use of discourse in practice included client-specific factors and needs, availability of time for transcription and analysis, and speech pathologists' knowledge level and confidence with discourse. Increased knowledge of strategies and methods with discourse can inform decision-making for clinicians working in TBI.

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Older adult admissions to subacute rehabilitation following traumatic brain injury: A comparison of characteristics, speech pathology input and outcome indices across the adult age-span

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Background and Objectives: Although post TBI cognitive-communication difficulties are common, research in this area has typically not included those who sustain TBI at 55 years or older (Shorland, Douglas, & O'Halloran, 2020). Lack of information about this older age group has management implications because mechanisms of injury, brain insult and comorbidities typically differ between younger and older adults who sustain TBI (Staples, Wang, Zaros, Jurkovich, & Rivara, 2016). The subacute hospital setting is the start of a rehabilitation journey for many adults. Considering trends for adults of increasing age admitted to this setting with TBI can help inform services and supports for older adults. The overall objective of this research was to document demographic and injury characteristics, outcome indices and speech pathology input (with a particular focus on cognitive-communication input) for adults admitted to subacute rehabilitation after TBI.

Method: This descriptive retrospective cohort study was based on analysis of data relating to inpatient episodes of care from a single subacute setting in metropolitan Australia over a one-year period. Admissions were located using International Classification of Disease (ICD-10-AM) coding that aligned with TBI. First time admissions in the calendar year (2019) were considered. Admissions were stratified by age for analysis.

Results: Preliminary analysis indicated 114 patients met criteria. They were aged 18-90 years at admission. Just over half of this group (52%) were ≥55 years and the highest number of admissions (18%) were for those aged 75-84 years. Almost 60% of all TBI admissions were due to falls. Transport related accidents were the most common injury cause for those <55 years (44%) and particularly common for those <25 years (71%). Falls led to most TBIs in those ≥55 years (81%) and were the cause of all TBIs in those ≥85 years. Further trends relating to demographic and injury characteristics, speech pathology input and broad outcome indices will be explored.

Conclusion: Admissions reflect established age-based TBI trends and reinforce the discrepancy between the substantial number of older adults who require rehabilitation after TBI and the lack of research evidence we have to support this population in areas such as cognitive-communication. Targeted research to inform rehabilitation service provision to meet the needs of older adults is essential.

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"Mum you have to realise it is NOT dad, not the way he used to be": Exploring the theoretical constructs of social communication impairment after right hemisphere damage (RHD)

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Background and Objectives: Individuals with right hemisphere brain damage (RHD) experience difficulty forming and maintaining interpersonal relationships with consequent reductions in social networks. Social communication impairments have been posited as the reason of these changes, but uncertainty exists around how best to conceptualise social communication in people with RHD. Do social communication impairments per se exist, or should the changes in "social communication" evident after RHD be described through another theoretical lens such as cognitive or pragmatic models? The aim of this presentation is to explore the construct of social communication in RHD and how pragmatic and/or social deficits contribute to this complex task that allows us to achieve social goals and interactions across contexts.
Method: A theoretical literature review was conducted across three constructs: social communication, pragmatics and social cognition to develop clear descriptions of the abilities or skills attributed to each construct. These descriptions were then used to examine how each has been or could be applied to our current understanding of 'social communication impairment' in RHD. Mapping of these constructs will then occur with three cases identified as presenting with impaired social communication based on significant other report using the LaTrobe Communication Questionnaire.
Results: The theoretical literature reviews have demonstrated the construct of social communication to be complex. Pragmatics and social cognition were both seen to contribute to social communication abilities with difficulty differentiating it from pragmatics. Interestingly the construct of pragmatics has significant overlap with both social communication and social cognition. One point of debate in relation to overlap between constructs centred around whether these constructs should be viewed as unitary or intersecting components. In mapping known communication deficits associated with RHD the overlap in these constructs emerged.
Conclusions: Further work is required to ensure there is greater clarity in the definition of constructs such as social communication, pragmatics and social cognition to assist clinicians in understanding the nature of communication disorder after RHD. This will then inform assessment and therapy for this population that is under-recognised and ultimately improve social participation and quality of life.
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Development and validation of the Brief Executive Language Screen (BELS) for frontal aphasia

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Background and Objectives: The ability to produce spontaneous speech relies upon core language skills like naming, and other cognitive processes including executive functions. To date, aphasia assessment tools have primarily focused on classical aphasia type. We developed a novel *Brief Executive Language Screen* (BELS) designed to assess language skills and executive functions critical for spontaneous speech. The BELS comprises 11 subtests that assess articulation and core nominal language skills (repetition, naming and comprehension), similar to other aphasia measures, along with assessments of propositional language (connected speech and phonemic/semantic word fluency) and incidental verbal memory. Uniquely, the BELS incorporates a sentence completion task that measures executive functions (verbal initiation, inhibition and selection).
Method: One-hundred and fifty-eight healthy controls and 195 acute stroke patients were recruited for the BELS development and validation studies. Confirmatory factor analysis was used to determine construct validity and logistic regression was used to evaluate the discriminative validity. This informed the final version of the BELS, which was assessed via comparison to standard neuropsychological tests to ascertain convergent and divergent validity.
Results: The three-factor structure of the BELS was confirmed; that is, the articulation, nominal language and propositional language components comprised of uniquely different constructs. The BELS demonstrated practical utility as a sensitive measure of aphasia as it was able to discriminate between the performance of healthy controls and stroke patients on almost all subtests. Thus, 30-50% of stroke patients were impaired on propositional language or executive function subtests, relative to the healthy normative data. Surprisingly, the BELS incidental memory subtest revealed impairment in ~40% of stroke patients. Based on these initial findings, two of the 11 subtests were adjusted and the final version of the BELS was validated against select neuropsychological tests.
Conclusions: The BELS is a brief, sensitive and novel tool that uniquely assesses the executive components critical for the spontaneous expression of language. In addition, the BELS is a valid and clinically useful tool for detecting articulation and nominal language deficits, along with verbal memory.

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Are there any social media skills training resources available for people with a brain injury? Results of a scoping review

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Background and Objectives: As a result of the COVID-19 pandemic, people increasingly used the Internet and social media for work, education, and to connect socially. However, people with traumatic brain injury have experienced challenges in using social media and rehabilitation professionals have described being inadequately prepared to support them in its use. This scoping review aimed to identify and synthesise: (a) research on interventions addressing social media skills and safety, with a focus on people living with health conditions, (b) freely available online resources for the general public in social media skills training; and (c) online support groups for people with brain injury.
Method: An integrative scoping review was conducted, with a systematic search strategy applied across multiple academic databases, Google Scholar, and Google (in March and again in November, 2020). Data collected was critically appraised and integrated qualitatively to describe key features of existing social media training resources.
Results: The review identified 47 peer-reviewed academic articles, 48 social media training websites, and 130 online support groups. A key recommendation was interactive training with practical components addressing online safety, and how to use platforms and connect with others. Target behaviours identified across the three information sources included: social participation, professional use (e.g., for employment or social marketing), cybersafety, social media (or information and communications technology) knowledge or use including content creation, and wellbeing. A list of online support groups was generated as a resource for people with brain injury. However, there were no social media training resources identified that were accessible for people with a brain injury.
Conclusions: Training resources available to support people with brain injury to use social media are limited. However, we know that rehabilitation after a brain injury should target social media use and include explicit instruction targeting communication, participation, and risk management. Findings from this review have informed development of an online evidence-based resource for people with brain injury who may be vulnerable when participating in social media. This resource may drive sustainable change through helping people with brain injury to build their own social media mastery and participate in supportive online networks.

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Getting on with the job: Developing a better understanding of supporting clients with cognitive-communication impairments return to work

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Background and Objectives: Many people with acquired brain injury (ABI) have return to work (RTW) goals, but globally RTW rates are poor. Interpersonal and cognitive-communication abilities influence RTW outcomes after ABI. For vocational rehabilitation (VR) to be successful it involves personalised therapy that can be developed through a clear understanding of the intended work role. We identified a knowledge translation gap with limited resources and practice guidelines for vocational communication assessment and therapy. A service development activity was undertaken followed by a formal research project aiming to understand the evidence, inform clinical processes, tools and resources to help address RTW goals for those with communication impairments in the context of an interdisciplinary team (IDT) VR model.
Method: The research project involves a 3-phase approach to understand current evidence for communication assessment and intervention in the ABI RTW population and to inform development of associated clinical tools and processes. Phase 1: a Scoping Review was completed following the Arksey and O’Malley Framework, with additions by Levac and colleagues. Phase 2: a mixed methods approach of a clinical benchmarking survey and expert opinion focus groups. Phase 3: a review of clinical tools and processes that were developed as part of the initial service development activity.
Results: Phase 1: The Scoping Review has been completed. Evidence gathered from this is helping to inform cognitive-communication assessment and treatment for people with VR goals in a community ABI service. This includes a clinical framework that incorporates evidence-based cognitive communication assessment practises and processes; vocational communication analysis tools; individualised vocational communication therapy; communication strategy application for workplaces; and structured processes for ongoing communication-based VR.
Conclusion: Findings from a Scoping Review on assessment and treatment of cognitive-

communication impairments after ABI in the RTW population will be presented. These findings will help to inform the management of cognitive-communication impairments in the vocational ABI population and support people with communication impairments RTW. Details of how the results fit within the broader delivery of VR in ABI will also be discussed.

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Session 19

Do more for more: Reward processing underlying apathy following moderate-to-severe traumatic brain injury

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Background and Objectives: Apathy is a prevalent and disabling behavioural syndrome after traumatic brain injury (TBI). Previous studies have identified cognitive correlates of apathy based on neuropsychological tests, yet existing interventions have rarely succeeded. A more ecological approach of reward processing holds promise for mechanistic understanding and targeted treatment of this debilitating condition. Here, we developed a 20-minute computerised task and examined the ability to process intrinsic (e.g., enjoyment) and extrinsic (e.g., money) reward underpinning apathy after TBI.

Method: The study included 71 individuals with moderate-to-severe TBI and 41 demographically matched healthy controls. Patients with TBI were classified into TBI with apathy (TBI+A) and TBI without apathy (TBI–A) groups using a cut-off for the Dimensional Apathy Scale. During the behavioural task, participants received gifts on their birthday. In the first section for intrinsic reward, participants decided whether to go to their close friends and collect the gifts ('go' option) or wait for the identical gifts delivered to their house ('wait' option). The 'go' option required continuous effort of typing interesting proverbs while participants had to constantly look at an empty screen for the 'wait' option. A questionnaire was given after this first section to assess participants' evaluation on each option. In the second section for extrinsic reward, the procedure was the same, with the addition of extra money given every time participants chose to 'go' instead of to 'wait'. Throughout the task, a higher number of 'go' decisions indicated better performance.

Results: For intrinsic reward, people with TBI+A, TBI–A and controls showed similar levels of performance ($p=.36$, $\eta_p^2=.018$). However, the TBI+A group had a significantly higher percentage of people rating the "go" option as effortful compared to the control group ($p=.01$, $w=.37$). Individuals with TBI–A did not differ from those with the TBI+A and controls in ratings. For extrinsic reward, the TBI+A group had the worst performance, then TBI–A, and control groups performing the best ($p<.001$, $\eta_p^2=.194$).

Conclusions: This study provides the first evidence for dysfunctional intrinsic and extrinsic reward processing underpinning apathy after TBI. Strategies that tackle reward processing abnormalities may be beneficial for interventions and management of apathy, which in turn improve patients' and carers' quality of life.

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Comparing the Westmead Post Traumatic Amnesia Scale, Galveston Orientation and Amnesia Test and Confusion Assessment Protocol as Measures of Acute Recovery Following Traumatic Brain Injury

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Background and Objectives: The duration of the acute period of recovery following traumatic brain injury (TBI), remains a widely used criterion for injury severity and clinical management. Consensus regarding its most appropriate definition and assessment method has yet to be established. The present study compared the trajectory of recovery using three measures: the Westmead Post Traumatic Amnesia Scale (WPTAS), The Galveston Orientation and Amnesia Test (GOAT) and the Confusion Assessment Protocol (CAP). Patterns of symptom recovery using the CAP were explored.

Method: 82 patients with moderate to severe TBI who remained in Post Traumatic Amnesia (PTA) were recruited on admission to a specialized inpatient ABI ward. Patients cognitive and behavioural status was monitored daily throughout the duration of PTA using the WPTAS and Agitated Behaviour Scale (ABS). The CAP and GOAT were administered 2 to 3 times per week until pass criteria was met. **Results:** Participants emerged from PTA earliest on the CAP followed the GOAT, and last on the WPTAS. There was good concurrent agreement between CAP and GOAT as to PTA status but both tests had poor agreement with WPTAS. Of patients considered out of PTA on CAP, the majority exhibited signs of amnesia on the WPTAS and one third had clinical levels of agitation. **Conclusion:** The WPTAS captures a later stage of PTA recovery that requires specialised management due to the presence of anterograde amnesia and agitation, until resolution occurs. Comparatively, the CAP and GOAT appear less sensitive to this later stage and capture the earlier phase of PTA, characterised by a multifaceted array of symptoms which tend to resolve, leaving ongoing disruption in the inability to lay down new memories. **Correspondence:** Courtney Spiteri; Courtney.baxter@monash.edu

Temporal Lobe Activation Predicts Episodic Memory Following Traumatic Brain Injury

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Background and Objects: The temporal lobes are critical for episodic memories and are preferentially affected following a traumatic brain injury (TBI). As such, episodic memory difficulties are common following TBI; however, the underlying neural changes that precipitate or maintain these difficulties in the early phase of recovery remains poorly understood.
Method: We use functional magnetic resonance imaging (fMRI) to interrogate the relationship of temporal lobe activation in response to face, scene, and animal stimuli. Twenty-five patients with moderate to severe TBI were recruited an average of 2 months' post-injury ($M = 2.16$ months, $SD = 1.48$ months, range = 0.69 – 6.64 months) and compared with 21 demographically similar healthy controls.
Results: Findings indicate that memory for faces was preferentially impaired ($p = .028$), compared to scene ($p = .140$) and animal stimuli ($p = .383$). Decreased activity in temporal lobe structures was present for both face and scene stimuli, but not for animals. TBI patients demonstrated lower activation of the right transverse temporal gyrus when presented with face stimuli. Greater activation of this structure during presentation of faces was associated with better long-term face recognition ($r(28) = .497$, $p = .005$). TBI patients demonstrated lower activation of the right fusiform gyrus when presented with scene stimuli. Greater activation of the fusiform gyrus during the presentation of scenes was associated with better long-term scene recognition ($r(27) = .482$, $p = .008$).
Conclusions: These findings provide evidence to suggest that TBI: a) preferentially affects memory for complex stimuli such as faces and scenes, and b) causes aberrant neuronal processes despite lack of evidence of significant impairment in behavioural performance. The mechanisms underpinning these findings are discussed in terms of differences in strategy use and reduced neural efficiency.
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Applying a novel diffusion weighted imaging approach to the study of white matter tract microstructure and cognition following mild traumatic brain injury

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Background and Objectives: Diffusion-weighted imaging (DWI) is commonly applied to the study of white matter tract (WMT) damage following mild traumatic brain injury (mTBI), but research findings have yet to clarify the nature of WMT microstructural changes during the post-acute period (i.e. >6 weeks post-injury). This study combined neurite orientation density and dispersion imaging (NODDI) with diffusion tensor imaging (DTI) and employed a novel DWI processing and tractography method to reconstruct key inter- and intra-hemispheric WMT commonly implicated in mTBI. The primary aim was to determine whether the microstructural properties of key WMT were associated with cognitive recovery at 6-12 weeks following mTBI.
Method: A sample of 46 adults (aged 18-60) participated in the study, comprising 26 participants with mTBI and 20 with trauma controls (TC). At 6-12 weeks post-injury, participants underwent an MRI scan and a comprehensive Neuropsychological Assessment. Following, DWI data processing and tractography reconstruction, derived tract-based DWI metrics were calculated. Group-level associations

between these DWI metrics and cognitive indices were subsequently examined.
Results: Statistically significant between-groups differences were found for DTI and NODDI metrics within key WMT, this included reduced fractional anisotropy and isotropic volume fraction, as well as increased orientation dispersion index. Across a number of cognitive domains, the DWI metrics of the TC group were consistently associated with cognitive performance and findings were in the expected direction. In contrast, abnormal associations were revealed in the mTBI group on all of these cognitive domains. Specifically, results for the mTBI group revealed either no association between cognitive measures and DWI findings, or an inverse relationship to that demonstrated in the TC group.
Conclusions: The findings of this study demonstrate that WMT microstructural changes are apparent at 6-12 weeks following mTBI that are suggestive of axonal injury and ongoing axonal remodelling. Importantly, these neuroimaging findings were not associated with cognitive performance for the mTBI group. This suggests that despite relatively preserved performance on neuropsychological testing in the post-acute period, changes to WMT microstructure remain evident. Thus, the trajectories for cognitive and structural neuropathological recovery following mTBI seem distinct and appear to be occurring at different rates.
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Does ongoing cognitive decline occur decades after a moderate to severe traumatic brain injury? A prospective controlled study

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Background and Objectives: This prospective controlled study examined long-term trajectories of neuropsychological performance in individuals with traumatic brain injury (TBI) compared to healthy controls, and the impact of IQ, age at injury, time since injury, and injury severity on change over time.
Method: Fifty-three individuals with moderate to severe TBI (60.37% male; M 59.77yrs), and 26 controls (53.85% female; M 63.96yrs) were recruited and studied prospectively (M 12.72yrs between assessments). Participants completed measures of premorbid IQ (Weschler Test of Adult Reading), processing speed (Digit Symbol Coding Test), memory (Rey Auditory Verbal Learning Test) and executive function (Trail Making Test Part B), at a mean of 10.62yrs (Initial) and 23.91yrs (Follow-Up) post injury.
Results: Individuals with TBI did not show a significantly greater decline in neuropsychological performance over time compared with demographically similar controls. There was no association between change over time with IQ, time since injury or injury severity. Being older at injury had a greater adverse impact on executive function outcomes at the follow-up time point.
Conclusions: In this small sample, a single moderate to severe TBI was not associated with ongoing cognitive decline up to three decades post injury. Changes in cognitive function were similar between the groups and likely reflect healthy aging.
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Amyloid-β and tau imaging in chronic traumatic brain injury: A case-control study

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Background and Objectives: An association between a single moderate to severe traumatic brain injury (TBI) and Alzheimer's disease has been suggested, but little is known about amyloid-β and tau deposition in the chronic period (≥10 years) following a TBI. This case-control study examined amyloid-β and tau burden in individuals with TBI compared to healthy controls using positron emission tomography (PET).
Method: Eighty-seven individuals with moderate to severe TBI (72% male; M 57.53 years of age; M 21.72 years post injury), and 59 controls (59% male; M 60.34 years) underwent amyloid-β imaging with [^{18}F]NAV4694 and tau imaging with [^{18}F]MK6240. Amyloid-β scans were quantified on the Centiloid scale (CL). The standardized uptake value ratio of (SUVR) of the tau scans were quantified in four regions of interest (ROI) (mesial temporal (Me); mesial temporal and temporal neocortex (TempJack); temporoparietal neocortex (Te); and rest of neocortex (R). Multiple regressions were conducted

with participant type (case/control), current age and sex included as independent variables.

Results: Visual assessment of the PET images revealed no significant differences in the number of positive amyloid scans (TBI group n=6/87; Control group n=7/59, p=.301) or positive tau scans (TBI group n=0/85; Control group n=3/59, p=.067). Participant type was not a significant predictor of global amyloid burden. Age was the only significant predictor of global amyloid burden (p<.001), with increasing age associated with increasing CL value. Participant type was a predictor of tau burden, with control participants having a slightly higher SUVR in every ROI (all p<.001).

Conclusions: In this sample, a single moderate to severe TBI was not associated with higher burden of amyloid-β or tau. This study does not provide support for an association between TBI and Alzheimer's disease pathology.

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Frequency of peripheral vestibular pathology following traumatic brain injury: a systematic review of literature

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Background and Objectives: Impairment to vestibular system pathways following traumatic brain injury (TBI) has been documented, however, the nature, frequency, and severity of vestibular dysfunction in this patient population remains unknown. The absence of such knowledge has significant implications from the clinical practice point of view, affecting adequate diagnosis and management. The objective was to systematically review literature in an aim to establish the frequency of occurrence of peripheral vestibular pathology in adults following non-blast related TBI as measured through the standard audiological vestibular test battery.

Method: An English language systematic search using MEDLINE, EMBASE, PsycINFO, CINAHL, and hand-searching of reference lists was conducted from January 1, 1990 to May 14, 2019. Twenty-three out of 417 originally identified articles were retained. TBI and peripheral vestibular findings were extracted and synthesised.

Results: Using the Oxford Centre for Evidence-Based Medicine levels of evidence (2009), level 2b was the highest level of evidence within the review. Post-traumatic vestibular deficits were only explored in tertiary settings and mostly retrospectively, leading to potentially incorrect conclusions relating to the true frequency of such deficits. Nevertheless, Benign Paroxysmal Positional Vertigo (BPPV) was the most frequently identified vestibular deficit secondary to TBI, diagnosed in 39.7% of 239 participants across six of 23 studies.

Conclusion: A considerable need for prospective longitudinal research investigating vestibular dysfunction following TBI exists. Prospective longitudinal designs will provide a more precise representation of incidence, insights into progression and recovery while controlling for brain adaptation mechanisms and possible impact resulting from acute intervention on patient outcomes.

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Neuropsychological recovery in the first 12 months following severe traumatic brain injury: a longitudinal study with serial assessments

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Background and Objectives: Neuropsychologists are regularly asked about the course of cognitive recovery in the twelve months following moderate-to-severe traumatic brain injury (TBI), however there is limited evidence to provide answers to patients, family or other clinicians.

Method: This longitudinal study was designed to remedy the methodological problems in the existing literature by employing serial, monthly assessments from 3- to 12-months post-trauma in a severe TBI sample (n=23). A new, brief yet sensitive cognitive assessment battery, the SCORE-TBI (Short Cognitive Outcome Repeatable Examination for Traumatic Brain Injury) was developed from existing cognitive assessment measures, with four alternate forms. Fifteen variables measuring seven cognitive domains were included: orientation, attention, processing speed, executive function, memory, language and visuospatial function. To verify the equivalence of the alternate forms, a matched control group (n=23) was used (no statistically significant differences). In addition, this control group enabled the study to evaluate practice effects (no statistically significant differences) and provide a comparison standard of cognitive functioning to facilitate the interpretation of the TBI recovery curves.

Results: Twenty-one of 23 consenting TBI participants continued with the serial assessments. Hierarchical growth model analyses typically revealed linear recovery trajectories over the first 12 months, however four distinct patterns of cognitive recovery emerged based on the magnitude of the estimates of the fixed time effects. Nonetheless, by 12-months post-trauma, a significant proportion (up to 36%) had residual mild to severe impairments in various cognitive domains. This was particularly evident on aspects of cognition reflecting the characteristic TBI impairment triad including measures of processing speed (12% severe, 24% mild), memory (12-35% severe, 6% mild) and executive functions (12% severe, 12-18% mild).

Conclusions: These results provide detailed information about patterns of cognitive recovery and frequent serial evaluation of cognitive recovery on a month-by-month basis over the critical post-acute period. We envisage these results will be valuable not only for further understanding the recovery process after TBI, but also for clinicians to use as a comparison point for the typical recovery trajectory, thereby informing clinical practice and educating relatives about the patient at hand.

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Session 20

Behaviour Support Interventions for Sexualised Behaviours: A Large Case Series

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Background and Objectives: Inappropriate sexualised behaviours (ISX) are a challenging clinical sequelae of acquired brain injury (ABI). Examples of ISXs include inappropriate verbal behaviour, touching other people (genital and non-genital), public exhibitionism and/or masturbation, and coercive sexual behaviour. ISXs often are traumatising for victims, and are a priority target for behaviour support intervention. There is no established first-line treatment for addressing ISXs. This presentation describes a clinical trial of community-based behaviour support interventions to address ISX after ABI in a large case series (n=24).

Method: Sexualised behaviours were addressed in the context of a client's broad behavioural profile. Interventions were consistent with the framework and components of positive behaviour support, and targeted change in the person with ABI, their support personnel, or other environmental domains. Using a repeated measures design, behaviour data were collected using the Overt Behaviour Scale at baseline, closure, and follow up.

Results: Participants were adult, predominantly male, and approximately half had experienced traumatic brain injury, and the remainder either cerebrovascular accident or hypoxic episode. Sexualised behaviours at baseline, in order of prevalence within the sample, were sexual talk, touching (non-genital), touching (genital), exhibitionism, masturbation, and coercion. The data were analysed using multi-level models and visual inspection. For the sample as a whole, ISXs showed a statistically significant decline between baseline and closure, and this was maintained at follow up. Individual outcomes reflected the group result, but also showed variations on the overall pattern. The interventions showed treatment specificity for ISXs because concurrent challenging behaviours, such as aggression and absconding, did not show significant change over time.

Conclusions: The results show that community-based behaviour support interventions can have lasting positive effect on ISXs after ABI. The specificity of the intervention effect is consistent with the notion that different categories of challenging behaviour are distinct clinical phenomena. To account for challenging behaviour after ABI, process-based approaches focused on functional assessment and modifiable treatment elements provide promise for effective individualised behaviour support.

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Understanding the multidimensional nature of sexuality after traumatic brain injury

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Background and Objective: Up to half of individuals experience changes in sexuality after traumatic brain injury (TBI) that restrict quality of life and relationships. Extant literature highlights a number of medical and physical, neuropsychological and psychological, and social and relationship factors associated with sexuality outcomes after TBI. Despite a growth in research investigating correlates of sexuality disturbance after TBI, previous studies have typically examined restricted subsets of predictors, with the mechanisms through which factors interfere with sexuality yet to be explored. The aim of this study was to examine associations between sexuality and sociodemographic (age, sex, education), medical (injury severity, time since injury), physical (fatigue, pain, independence), neuropsychological (memory, attention, executive function), psychological (depression, anxiety, self-esteem), and social

participation factors.

Method: The study used a retrospective cross-sectional design. Eighty-four individuals with TBI consecutively recruited after discharge from rehabilitation completed a single 90-minute research assessment at an average of 2.78 years post-injury (range 1–10 years). A healthy, demographically similar control group recruited from the general community completed sexuality, mood and self-esteem questionnaires by post.

Results: Individuals with TBI performed significantly worse on sexuality, mood and self-esteem measures than healthy controls, supporting previous findings. Results demonstrate significant relationships between younger age, lower depression and higher self-esteem with better sexuality post-TBI, although social participation and fatigue were not significant predictors of sexuality outcome in the regression model. Further analyses indicated that depression mediated the independent relationships between lower social participation and greater fatigue with a decline in sexuality after TBI.

Conclusions: These findings support sexuality changes after TBI as a multidimensional construct, highlighting depression as a novel mechanism through which other factors may affect sexuality after TBI. Clinicians should be proactive in assessing factors early on to minimise the occurrence and severity of poor sexual readjustment after TBI. Further research targeted towards the development of holistic, patient-centred interventions for sexuality after TBI is much needed.

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Cyberscams and Acquired Brain Injury: A Qualitative Exploration of the Lived Experience of Survivors and Close Others

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Background and Objectives: Individuals with acquired brain injury (ABI) may be highly vulnerable to cyberscams due to their cognitive and psychosocial impairments. However, the lived experiences of ABI cyberscam survivors and close others is not understood, and no effective intervention has been identified. This qualitative study aimed to explore the experiences of cyberscam survivors with ABI and their close others.

Method: Cyberscam survivors with ABI (n=7) and their close others (n=6) participated in one semi-structured interview exploring the scam experience, impacts, vulnerabilities and interventions. Transcribed interviews were analysed using Braun and Clarke's (2006) six-phase reflexive thematic analysis technique.

Results: using reflexive thematic analysis of interview transcripts, seven themes were identified: individual vulnerabilities, scammer tactics, the scam experience, discovery, impacts, responses from others, and suggestions for intervention. The journey towards romance scams and fraud victimisation was found to be complex, and was complicated by the ABI. Confusion, denial and disbelief created significant barriers to scam discovery, with cyberscams resulting in substantial financial losses, family conflict and shame. ABI-related cognitive impairments and social isolation increased vulnerability to being scammed and interfered with intervention attempts by family and professionals. Participants identified a lack of effective intervention strategies leading to strong cycles of scam re-victimisation.

Conclusions: The practical and emotional impacts on both people with ABI who have been scammed and their family members, and a lack of effective intervention, highlight the need for awareness campaigns and tailored education in order to de-stigmatise cyberscams and improve online safety for those with ABI.

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Can we treat social cognitive deficits after acquired brain injury? Feasibility findings from the SIFT IT pilot RCT

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Background and Objectives: A significant proportion of people experience social cognitive deficits following an acquired brain injury (ABI), yet the evidence base for these interventions in this population is limited. These deficits detrimentally impact social behaviour, which tend to be enduring and pervasive. The aim of this pilot RCT was to establish the feasibility of a novel social cognition group treatment program ('SIFT IT') for people with ABI.

Method: A multi-site RCT was conducted at three NSW brain injury rehabilitation services. Twenty-three participants (out of 28 recruited) were eligible and randomised to either Treatment (N = 12) or Waitlist (N = 11). The Treatment arm received the SIFT IT program (with topics comprehensively covering the breadth of social cognitive processes), which ran for 14 weekly 90-minute sessions. Outcome assessments were conducted at three time-points (baseline, post-treatment, and three-month follow-up). Feasibility outcomes were measured throughout the study: demand, implementation, practicality, and acceptability of procedures were monitored and

reviewed.
Results: Feasibility outcomes were largely met: 61% of potential participants were recruited; there was a 91% retention rate post-treatment; the blind assessor remained blind to 98% cases of group membership; the SIFT IT program was implemented with close fidelity to its protocol; 93% of sessions were attended by participants; 94% of SIFT IT commencers completed the treatment program; and all rated their satisfaction with the program at 8/10 or higher. Challenges were experienced in relation to the time taken to recruit to groups (with a mean of five months from start of recruitment to group commencement) and maintaining fidelity to group allocation (with re-allocation necessary following two participant requests to move group). **Conclusions:** The SIFT IT clinical trial showed evidence of demand amongst brain injury rehabilitation services, the program was both implemented as planned and proven practicable, and participants reported high satisfaction with the program. Even so, the challenges experienced will be discussed, including the implications of these findings for future research.
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Home-Based Light Therapy for Fatigue Following Acquired Brain Injury: A Pilot Randomized Controlled Trial

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Background and Objectives: Fatigue and sleep disturbance are debilitating problems following brain injury and there are no established treatments. Building on demonstrated efficacy of blue light delivered via a lightbox in reducing fatigue and daytime sleepiness after TBI, this study evaluated the efficacy of a novel *in-home* light intervention in alleviating fatigue and sleep disturbance after injury.
Methods: The impact of exposure to a dynamic light intervention (Treatment) was compared to usual lighting (Control) in a randomized within-subject, crossover trial. Treatment comprised daytime blue-enriched white light (CCT >5000K) and blue-depleted light (<3000K) 3 hours prior to sleep. Outcomes were fatigue (primary outcome), daytime sleepiness, sleep disturbance, insomnia symptoms, psychomotor vigilance, mood and activity levels. Participants (N = 24, $M \pm SD_{age}$ = 44.3±11.4) had mild-severe TBI or stroke >3 months previously, and self-reported fatigue (Fatigue Severity Scale ≥4). Following 2-week baseline, participants completed each condition for 2 months in counter-balanced order, with 1-month follow-up.
Results: Random-effects mixed-model analysis showed no significantly greater change in fatigue on the Brief Fatigue Inventory during Treatment, but trended towards improvement (p = .33, d = -0.42). There were significantly greater decreases in sleep disturbance (p = .004), insomnia symptoms (p = .036), reaction time (p = .004) and improvements in productive activity (p = .005) at end of treatment relative to Control, with large effect sizes (d > 0.80). Changes in other outcomes were non-significant.
Conclusions: This pilot study provides preliminary support for *in-home* dynamic light therapy to address sleep-related symptoms in acquired brain injury.
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Building capacity among psychologists in treating clients with mental health needs after traumatic brain injury via video consulting: Evaluation of a pilot training workshop

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Background: Traumatic brain injury (TBI) is a significant global health issue that can lead to high levels of psychological distress, yet few psychologists in Australia are trained in working with this complex clinical group. Furthermore, though funding is provided to provide psychological services via video-consulting (VC), prior to COVID-19 provision of service by this media has been low.
Objective: Evaluate whether training in TBI, eHealth and evidence based TBI psychological therapies increased TBI knowledge, provider usage of VC, and mental health services to individuals with a TBI.
Methods: Mental health professionals completed a range of self-report measures before (n=50), after (n=48), and four months following (n=30) a one-day workshop. Participants' TBI knowledge, client-base and confidence, motivation, access and attitudes towards VC were assessed and analysed using a mixed methods approach.
Results: After training, participants did not show any change in TBI knowledge but indicated significant reductions in technical and therapy barriers to using VC. At follow up, participants reported significant increases in their confidence and motivation to using

VC and reported significant reductions to VC barriers across all categories. At follow up, a large increase in VC usage was reported from a very low base and also increases in the number of TBI clients seen but these increases were not statistically significant.
Conclusions: Training to increase TBI knowledge requires specific assessment tools and although training appears to reduce barriers to using VC, uptake in clinical practice may benefit from additional components such as environmental changes or increased role playing and supervision and warrants further research.
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Session 21

How to account for the Impact of COVID-19 in the Assessment of Learning Disabilities

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Synopsis of session: The COVID-19 pandemic has led to worldwide disruption in educational access for children and adolescents and is likely to alter expected trajectories of academic achievement. The impact may be greater for youth who have developmental delays and learning disabilities. Among those who had already been identified as needing extra learning support, the lack of consistent access to special education services may have led to attenuated gains. Similarly, fewer children at risk for learning disabilities may have come to clinical attention.
Pediatric neuropsychologists will be at the front lines of identifying and quantifying the impact of COVID-19 on development, including academic achievement. Months, if not more than a year, of interrupted schooling poses challenges for data interpretation and learning disability diagnosis. The possible impact of mental health factors will also need to be considered, in addition to cultural disparities. In this session, we will identify these factors and discuss strategies about how to account for them, anticipating an increase in learning-related concerns as child and adolescents return to traditional school models.
Level aimed for: Intermediate
Learning Objectives:

1. Recognize and describe current diagnostic criteria and methods for identifying learning disabilities.
2. Identify ways that the impact of the COVID-19 pandemic may confound the assessment of learning disabilities and strategies to address these factors.

Biography: Dr. Molly Colvin is Director of the Learning and Emotional Assessment Program (LEAP) at Massachusetts General Hospital and an Assistant Professor of Psychology at Harvard Medical School. She is board certified in clinical neuropsychology with subspecialty certification through the American Board of Professional Psychology (ABPP). LEAP specializes in the neuropsychological assessment of children and adolescents who have learning, emotional, behavioral, and social challenges. Dr. Colvin has particular expertise in childhood-onset neuropsychiatric conditions, including learning disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Obsessive Compulsive Disorder (OCD), Tourette Syndrome (TS), and Duchenne Muscular Dystrophy (DMD).
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Childhood dementia in Australia: Population data and patterns of cognitive and neurobehavioural symptoms associated with the most common form of childhood dementia

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Background and Objectives: We present outcomes from the first Australian burden of illness study (THEMA Consulting Report, 2020) which provides a framework definition of childhood dementia disorders and seeks to define the economic and societal impact of these diseases. Additionally, we present preliminary findings from a thematic literature analysis, seeking to characterise patterns in cognitive and neurobehavioural degeneration that occur across a subgroup of childhood dementia disorders.
Method: Definition for childhood dementia was restricted to childhood neurocognitive decline of monogenic genetic etiology. Surveillance research identified the current and forecasted number of cases and costs associated of childhood dementia in Australia from 2021 to 2030. Incidence and life expectancy estimates were extracted from the literature and used to generate estimates of Disability Adjusted Life Years, healthcare costs, cost of Life Years Lost (YLL), and cost to NDIS across the Australian Childhood Dementia cohort.
Adjunct studies have extended to a systematic literature review and thematic analysis focused on the cognitive and behavioural issues associated with the lysosomal storage disorders, the largest aggregative subgroup within the childhood dementia spectrum.

Results: Over 70 individual genetic conditions were identified, with an estimated incidence of 1 in 2800 births, equating to 129 Australian children born in Australia per annum; with the largest representative group, the lysosomal storage disorders (21%), followed by mitochondrial disorders (20%). In 2021, it is estimated there will be 2273 Australians living with childhood dementia, 1396 of whom are under the age of 18, with an average life expectancy of 28 years. The YLL from 2021 to 2030 in Australia was estimated to be 10962 years.

Medline literature review identified over 1500 papers from the indexed Medical Subject Headings for lysosomal storage disorder AND cognitive OR behavioural terms under 24-years-old. Further review of these titles and abstracts refined the list to 117 papers. Preliminary themes of cognitive/behavioural degeneration associated with this collective of childhood dementias will be presented at the 6th Pacific Rim Conference.

Conclusions: Childhood dementia constitutes a devastating individual and societal burden that remains poorly identified and understood. While individually rare, collective analyses to identify common disease phenomenology and mechanisms will inform patient management and therapeutic development.

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Cognitive, behavioural and psychological outcomes in individuals with sagittal synostosis: a meta-analysis examining the impact of surgical status

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Background and Objectives: Sagittal synostosis (SS) involves a deformation of the skull due to the premature closure of the sagittal suture. Reports of cognitive, behavioural and psychological functioning in people with SS vary widely in the literature. Thus, the current meta-analysis synthesised research examining these outcomes in individuals with SS.

Method: Hedges'g (g_w) effect sizes compared outcomes between those with SS and healthy peers/norms. Subgroup analyses categorised findings by surgical status (conservatively managed [CM]/pre-surgery/post-surgery/combined), type of measure (objective/subjective) and source of comparison data (peers/norms).

Results: Data from 32 studies, involving a pooled sample of 1,422 children/adults with SS and examining 16 domains, were analysed. Individual study results varied substantially, including from moderate positive, to large and negative group differences in general cognition ($N_{studies}$ = 19; $g_{w\ range}$: 0.52 to -1.08), verbal ability ($N_{studies}$ = 14; $g_{w\ range}$: 0.57 to -1.20), motor functioning ($N_{studies}$ = 13 $g_{w\ range}$: 0.58 to -1.04) and visuospatial ability ($N_{studies}$ = 13 $g_{w\ range}$: 0.49 to -0.43). Only global development (g_w = 0.58, p = .01) in CM (unoperated) children, and short-term memory (objective g_w = -0.45, p = <.01; subjective g_w = -0.39, p = <.01) and executive function (objective: g_w = -0.40, p = <.01) in post-surgery samples, reached significance.

Conclusions: The literature examining cognitive, behavioural, and psychological functioning in children with SS is highly disparate and often of low quality, with samples small and controls rarely recruited. Nevertheless, findings suggest that some children with SS experience negative outcomes and should therefore be routinely assessed.

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Cognitive comorbidities in juvenile absence epilepsy

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Background and Objectives: This study provides a novel and comprehensive characterization of cognitive functioning in a Juvenile Absence Epilepsy cohort. Historical misconceptions that Juvenile Absence Epilepsy was benign has led to neglect of the cognitive and psychosocial impacts of this common epilepsy syndrome. We also explore biomarkers of cognitive dysfunction, using routinely acquired electroencephalography recordings.

Method: Individuals diagnosed with Juvenile Absence Epilepsy were prospectively recruited through epilepsy specialist clinics. Measurement of cognitive abilities was guided by the Cattell-Horn-Carroll model. Self-reported psychopathology symptoms were assessed with standardised symptom-screening questionnaires across DSM-oriented subscales. Participants underwent 24-hour electroencephalography recordings as part of standard clinical care.

Results: Thirty-nine participants (66.7% female, median age 22 years) underwent cognitive assessment. Approximately half (56.4%) endorsed cognitive symptoms. Accounting for educational attainment, our sample demonstrated significant reductions in overall intellectual ability, acquired knowledge, long-term memory and retrieval and executive functioning compared to normative population means (0.59 – 0.99 standard deviation unit reductions). Nineteen patients completed the self-reported psychopathology questionnaire of which 52.6% endorsed borderline or clinical range

symptoms. Depression and inattention symptoms were most reported. Epileptiform activity over a 24-hour period did not significant predict cognitive performance.
Conclusions: This study addresses the scarcity of literature regarding neuropsychological comorbidities in Juvenile Absence Epilepsy. Whilst preliminary, outcomes suggest that cognitive dysfunction in Juvenile Absence Epilepsy is common, and neuropsychological screening should be better incorporated into standard management practices. The biological mechanisms underpinning cognitive deficits in this group of epilepsies remains unclear.
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Session 22

Working memory training: Taking a step back to retool and create a bridge between clinical and neuroimaging research methods

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Background and Objectives: Improvements in patient outcomes and mortality after brain injury, alongside an ageing population, have increased the need to develop interventions for individuals with impaired cognitive function. A key question is whether cognitive functions such as attention, memory and executive functioning can be improved through computerised cognitive training interventions, such as working memory training. Despite many studies over the last two decades, cognitive training is neither routinely prescribed nor proscribed in relation to healthy ageing or acquired brain injury.
Method: We present a critical review of the field of cognitive training. Original studies as well as systematic reviews and meta-analyses of working memory training interventions for healthy and clinical populations were examined. The aim was to identify methodological issues that are limiting the field in reaching definitive conclusions regarding the potential benefits of cognitive training.
Results: We argue that the factors hindering progress include (1) the tools researchers utilise to measure study outcomes; (2) the choice between employing active or passive control groups; (3) the focus on transfer effects at the expense of well-characterised training effects; (4) the overall lack of neuroimaging studies in individuals with neurological disorders.
Conclusions: We propose a multi-level framework to validate the efficacy of cognitive training interventions that combines behavioural and neuroimaging approaches relevant to both healthy ageing and clinical populations. To implement this we need to form multidisciplinary teams, employ interdisciplinary methods and build national and international collaborations based on open science principles.
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Investigation into Reliable Cut-off Scores on Effort Tests for Educationally Disadvantaged South African Brain Injury Litigants

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Background and Objectives: Tests to identify poor effort are usually included in neurocognitive assessments where there are secondary gain considerations. South African clinicians rely on effort tests developed in the US with cut-off scores for those populations. The purpose of this research was to evaluate the relevance of cut-off scores on selected tests for South African adults with disadvantaged quality of education relative to US standards.
Method: Data were collected for adults with mild/moderate traumatic brain injury, aged 24-58 years with 7-12 years of poor quality of education, who were involved in personal injury litigation. Based on behavioural criteria in the literature, participants were allocated to a “Sufficient Effort” group (n = 21; mean age 36.62; mean years of education = 10.33) and an “Insufficient Effort” group (n = 13, mean age = 33.33 years; mean years of education = 9.97). T-tests compared test performance between the two groups on the Dot Counting Test (DCT) Combination score, Reliable Digit Span (RDS), Rey Fifteen-Item Test (FIT) Combination Score, Rey Auditory Verbal Learning Test (RAVLT) Effort Equation and Trail Making Test (TMT A & B). For tests that differentiated the groups, cut-off scores were calculated to maximise specificity without compromising sensitivity.
Results: The Insufficient Group scored significantly poorer than the Sufficient Effort group for the DCT Combination score, FIT Combination Score and RAVLT Effort Equation. RDS and TMT A & B revealed no between-group differences. A DCT Combination cut-off score of ≥16 yielded a sensitivity of 75% and specificity of 75%. A FIT Combination cut-off score of ≤19 yielded 76.9% sensitivity and 94.7% specificity. A RAVLT Effort Equation cut-off score of ≤9 yielded 69.2% sensitivity and 76.2% specificity. This differs from the US cut-off recommended scores of DCT ≥17, FIT Combination Score <20 and RAVLT ≤12.
Conclusions: This preliminary research suggests that three of the five measures of effort distinguished participants with insufficient effort from those with sufficient effort and that cut-off scores needed to be adjusted for a South African educationally disadvantaged population.

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Identification of patients in prolonged disorders of consciousness (PDOC) using the UK Functional Assessment Measure (UKFIM+FAM): A predictive sensitivity analysis

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Background and Objectives: As acute services get ever better at saving lives, more patients are surviving with catastrophic brain injury and present to rehabilitation services still in a prolonged disorder of consciousness (PDOC). Some of these individuals will remain in a vegetative or minimally conscious states (VS/MCS) while others emerge into full consciousness.
The UK currently collects no systematic data to monitor directly whether patients emerge into consciousness. However, all specialist rehabilitation services routinely collect the UK FIM+FAM , which is a 30-item scale of motor, cognitive, commuicative and pychosocial function. This analysis explores whether total UK FIM+FAM scores (range 30-210) can be used as a proxy to identify patients in VS/MCS and, if so, with what cut-off points
Method: Retrospective analysis of a prospectively-collected consecutive clinical cohort (n=256 brain injured patients) presenting to a UK specialist PDOC evaluation programme between 2007-2019. Consciousness was evaluated using validated measures (eg the Coma Recovery Scale) in accordance with UK National Clinical Guidelines. The UKFIM+FAM was recorded in parallel by the clinical team on admission and discharge.
Results: Demographics**:** Males 63%; Mean(SD) Age 43.5(14) yrs; Time since onset 17(31) weeks; Aetiology: 41% Trauma, 33% Hypoxia, 21% Stroke, 5% Other. Median FIM+FAM admission score=30 (IQR 30-31) with 90% scores <=35.
By discharge, 64(23%) patients were still in VS; 88(34%) MCS, 78(30%) Emerged; 26(10%) unclassified. Mean (Bootstrapped 95%CI) FIM+FAM scores were 32.1(31.1, 33.4) for patients remaining in PDOC and 68.8(60.8, 77.5) for those who emerged (p<0.001). Patients In MCS had slightly higher FIM+FAM scores (mean 33.6(35.7, 36.7)) than those in VS (mean 30.0 (30.0, 30.1))
The area under a ROC curve for 'Emerged' vs 'Continued PDOC' was 0.945, with a cut-off score 31/32 achieving 70% sensitivity, 77% specificity. Positive and negative predictive values (PPV and NPV) were 96% and 79%. Equivalent figures 'Emerged vs MCS' suggested a cut-off of 35/36: (Area under the ROC curve 0.932; 86% sensitivity, 81% specificity, PPV 92%, NPV 87%.)
Conclusions: The UK FIM+FAM can provide an acceptable proxy for identifying patients in PDOC. Taken together, the results suggest that total UKFIM+FAM scores of <=31 and >=35) would respectively provide a reasonably robust separation of VS/MCS versus Consciousness for the purpose of future evaluations.

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Send in the Clowns (to the Funeral): Incongruent Scene Construction in Frontotemporal Dementia

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Background and Objectives: Scene construction is the capacity to generate richly detailed, spatially cohesive mental scenes and is associated with episodic memory. The capacity for scene construction is diminished in behavioural-variant frontotemporal dementia (bvFTD), especially for social scenes. Here, we further explored how the nature of an envisaged scene impacts task performance by utilising incongruent scene cues targeting semantic contributions to scene construction.
Method: The performance of 15 bvFTD and 11 Alzheimer's disease (AD) patients was contrasted with that of 16 healthy older controls, matched on relevant demographic and clinical variables. Using a modified version of the Hassabis et al (2007) scene construction protocol, participants were asked to imagine and describe a scene in as much detail as possible using all their senses. Scene cues included a person or object and a background setting. A total of 4 scenes were administered with two conditions manipulated, sociality (social; non-social) and congruence (congruent; incongruent).
Results: A significant three-way interaction (*F (*2, 39) =3.52; *p* = .039) was found. Post-hoc tests showed that both bvFTD (*p* ≤ .0001) and AD patients (*p* = .002) produced significantly more detailed scene descriptions in non-social, relative to social, incongruent scenes. Examining the contextual detail revealed AD patients produced significantly more spatial references (*p* ≤ .0001) in the non-social, relative to social, incongruent condition; whereas bvFTD patients performed significantly better in the non-social than in the social incongruent condition across all four content categories (all *p* values <.01).
Conclusions: These findings offer further evidence that the nature of an envisaged scene impacts scene

construction task performance in dementia syndromes. Increasing the semantic load by using incongruent cues resulted in more contextually rich scenes in bvFTD and, to a lesser extent, AD patients but only in the non-social condition. These findings suggest that the ability to recruit semantic knowledge may assist in the generation of richly detailed mental scenes when episodic information is unavailable.

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Session 23

Cognitive Rehabilitation for Substance Use Disorder; Results from the ACE Stepped-Wedge Cluster Randomised Trial.

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Background and Objectives: Cognitive impairments are common in those with Substance Use Disorder (SUD) and have been proposed to contribute to treatment dropout and relapse. Cognitive rehabilitation is an effective method for improving cognitive functioning in individuals with brain injuries and schizophrenia, and has been proposed to be an effective adjunct treatment for those with SUD. The current study aimed to examine the efficacy of cognitive remediation across ten residential SUD treatment services in a cluster randomised controlled trial, using a stepped wedge design.

Method: Participants in the study (N=527) received either treatment as usual (TAU) or TAU plus cognitive rehabilitation, and were evaluated over multiple eight-week periods while attending residential treatment. Cognitive rehabilitation consisted of 12 group sessions of one-hour duration delivered over six weeks, facilitated by trained SUD treatment staff. Participants were provided training in compensatory techniques for executive functioning, including practical activities, psychoeducation and practice exercises to complete between sessions. Primary outcome measures included self-reported executive functioning and treatment retention, in addition to secondary measures of cognition, quality of life and goal attainment.

Results: After completing 12 sessions of cognitive rehabilitation, participants reported significantly reduced levels of executive dysfunction compared to those who completed TAU only. Further, participants who engaged in some cognitive rehabilitation wore more likely to graduate from treatment.

Conclusions: Cognitive rehabilitation shows potential for improving cognitive functioning and treatment outcomes. Future research will aim to examine if cognitive rehabilitation efficacy is mediated by individual factors, such as improved cognitive ability or self-efficacy.

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Trial of an Inpatient Multi-disciplinary Led Cognitive Rehabilitation Group: Learnings & Challenges

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Background and Objectives: Group-based cognitive intervention is rarely offered in an inpatient hospital setting but has the potential to offer many benefits and respond to unmet needs. It provides opportunity for early psycho-education, early implementation of compensatory strategies, and connectedness through the shared group experience. Four stand-alone sessions were designed by a multi-disciplinary team of neuropsychologists, occupational therapists, and speech pathologists, to target four key functional areas: memory, everyday problem solving, managing medications and managing money. The main aims of the project were to assess the feasibility of such a group in a sub-acute hospital setting and evaluate patient benefits of participation.

Method: All inpatients on a sub-acute neuro-rehabilitation ward were considered. Main exclusion criteria were significant behaviour/mood disturbance, lack of insight, and/or communication impairments to the extent that they would impede ability to participate in group discussion. A brief evaluation survey was completed voluntarily by participants. Survey data focused on measuring change in participants' confidence to approaching certain problems, anticipated behaviour change post-group, and collecting feedback regarding session content and satisfaction.

Results: 40 patients participated in the group, with group sizes varying between 2-4 participants. 19 of 26 scheduled groups were run, largely due to facilitator availability and low referral numbers. Of those who participated in the survey (n=38); 67% of participants reported their behaviour was likely to change as a result of attending the session, 70% gave an overall satisfaction rating of > 8/10, 100% would recommend the session to someone else. Participants reports to enjoy the interaction with others, feelings of connectedness, and learning strategies to approach a particular problem. Larger group size and stratifying groups based on abilities were identified as key areas for improvement.

Conclusions: Multidisciplinary led inpatient groups have the potential to implement early education, compensatory strategies, and to provide a platform for social connectedness for those in early recovery from neurological injury. Logistical and clinical challenges of running an inpatient group include the time commitment, facilitator availability, and clinical variability within group, but may be overcome with considered planning and ward-based support for such a program.

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The experience and acceptability of smartphone reminder app training for people with acquired brain injury: a mixed methods study.

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Background & Objectives: Smartphones have been identified as promising external compensatory memory aids following an acquired brain injury (ABI), yet best practice methods for how to train their use remain unclear. This study investigated the experience and acceptability of three types of smartphone training intervention in people with an ABI.

Method: Twenty-six participants with an ABI (Stroke = 19, TBI = 5, other = 2; female = 16; M_{age} = 62; SD = 11.48; $N_{\text{systematic instruction}}$ = 7, $N_{\text{error-based learning}}$ = 11, $N_{\text{trial and error}}$ = 8) participated in a smartphone reminder app training session using one of three training methods (systematic instruction, error-based learning or trial-and-error). They then completed a semi-structured interview and questionnaire ratings about their experiences six-weeks post-training. Quantitative data were examined descriptively, while open-ended responses were analysed using thematic analysis with a critical realist approach.

Results: Most participants rated the training as enjoyable (80.8%) and reasonable in duration (88.5%), while some reported that a single training session was not sufficient to learn the app (34.6%). Participants' experience was characterised by five themes: (1) *Attitudes and pre-existing factors,* (2) *Experiencing the intervention,* (3) *Tailoring the intervention to the individual*, (4) *Facilitators and barriers to implementation* and (5) *Enhancing smartphone use in everyday life.* Having a structured session and a supportive trainer, being offered opportunities to practice and receiving immediate corrective feedback during the smartphone training were highlighted as positive features. Identified areas for improvement included tailoring the training to the person's technology proficiency and functional needs, providing post-training resources and including significant others. Participants who received error-based learning described experiences of anxiety and frustration during training, while those who received systematic instruction reported less increases in confidence using the app in everyday life.

Conclusions: Structure, practice, corrective feedback and a supportive trainer were common features of the training methods that enhanced acceptability. Special attention should be given to the individuals' emotional response when using error-based learning, while additional support and practice opportunities may be needed to promote smartphone use self-confidence when implementing an error-reducing approach.

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Memory Rehabilitation in a Group-based Format: What can be learned from participant feedback?

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Background and Objectives: Memory impairment is one of the most common and debilitating sequelae following an acquired brain injury (ABI), highlighting the importance of effective, well-tailored memory rehabilitation programs. With an emphasis on consumer perspectives, this study aimed to investigate (i) pre-training goals associated with participating in the Making the Most of Your Memory (Radford et al., 2010) program and (ii) post-training feedback.

Method: Forms were handed out pre- and post-training with the following questions: (Pre): What do you hope to achieve through participation in this training programme?; (Post): (i) For me, the best thing about this programme was: (ii) Here are some things that I learned: (iii) Other comments/recommendations to improve the workshop? Responses were obtained from 102 ABI patients who participated in the memory program between 2010-2019. The 6-week group-based program comprises psychoeducation about brain function and lifestyle factors that influence memory, as well as teaching, practise and discussion of strategies to optimise memory function.

Results: The most commonly identified goal prior to participation was improving memory function (39%; particularly, remembering names or people [20%], recalling past events [12%] or conversations [10%] and reducing word finding difficulties [8%]). Interestingly, 18% identified non-memory-related goals, including improving attention/concentration and organisation. Post-training, 32% of participants highlighted the learning of memory strategies. Strikingly, an even

higher proportion (44%) reported what they liked best was being in a group with people who share similar experiences. Regarding improvements, the most common suggestion was extending the program (longer/more sessions: 37%) to allow for a slower pace, more time for discussion and group exercises, though 31% felt no change is needed.
Conclusions: Cognitive rehabilitation has tended to emphasise strategy teaching and psychoeducation. This study, however, sheds light on the importance of socialisation and interaction offered by a group format, providing insight into important motivating factors, and ways in which memory rehabilitation programs might be improved, namely by providing more opportunities for participants to share personal experiences and possibly to maintain ongoing social support/contact. Future research might consider these factors in telehealth interventions.
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Exploring the impact of everyday memory difficulties in transient epileptic amnesia: A qualitative study

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Background and Objectives: Individuals diagnosed with transient epileptic amnesia (TEA) experience objective memory difficulties on assessment, but little is known about their subjective experience of everyday memory difficulties. We sought to understand the lived experience of memory changes in TEA and explore possible avenues for intervention.
Method: A two-part qualitative study was conducted in the UK involving a focus-group of 6 participants with TEA and 7 additional respondents to an online survey. In both formats, participants were asked about their experiences of memory difficulties associated with TEA, associated impact on their lives, and any strategies tried. Participants were also asked about their interest in participating in a memory group intervention including perceived barriers and facilitators to participation. Using qualitative thematic content analysis, two researchers independently reviewed focus group transcripts and survey responses to identify key themes reported by participants. Themes were discussed until consensus was reached, and subsequently clustered under superordinate categories before review and verification by a third researcher.
Results: Participants described a range of memory problems associated with TEA, including difficulties with episodic, prospective, topographic (route-finding), and working memory. For some, these had negative impacts upon family relationships, interactions with others, and the participant's mood – with increased anxiety about forgetting, frustration, and embarrassment. Others described positive impacts of family support and personal acceptance. Some participants reported minimal or no use of memory strategies, while others had employed a wide array of strategies, including external aids, internal strategies, social strategies, coping strategies, and environmental modifications. Finally, participants identified several practical and socio-emotional advantages to participating in a group-based memory intervention, although potential barriers to participation including applicability, individual preference, and ability to engage were also identified
Conclusions: People with TEA experience a range of memory difficulties which impact upon everyday life. While memory problems are common, engagement with memory strategies varies. Although individual preferences need to be considered, a group-based memory intervention – either face-to-face or online- was perceived as a potentially useful option.
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Is it important? Memory aid usage mediates relationships between task importance and prospective memory performance

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Background and aims: Prospective memory (PM) failures are a common feature of brain impairments. Memory aids have been found to reduce forgetting, yet a challenge for clinicians is to get clients to utilise these memory aids. This study investigated whether personal and social importance of tasks influenced memory aid usage and PM performance; and demographic, mood, personality, and environmental factors that may predict memory aid usage and PM performance.
Method: 492 community-dwelling participants aged 17-78 completed an online survey consisting of the Depression Anxiety and Stress Scale-21, Martin and Park Environmental Demands Inventory, and Australian Personality Inventory. Participants completed a PM task of remembering five italicised words embedded in the survey. Instructions for completing the task emphasised personal importance ($30 gift voucher), social importance (assisting the researcher), or standard instructions, with permission to use memory aids.
Results: Only 11.8% of participants remembered all five italicised words, with those that used aids more

likely to remember words. Despite importance instructions, 45% of participants did not use memory aids due to overconfidence, forgetting, or inattention to instructions. Higher levels of perceived social and personal importance predicted the number of words remembered, and this was mediated by the number of memory aids used. Demographics, mood, environmental demands, and personality did not predict memory aid usage, however females and those with higher levels of openness remembered more words.

Conclusions: These findings suggest that task importance may produce a false confidence in PM success. Therefore, clinicians should encourage clients to use memory aids to facilitate PM, especially in important tasks.

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Session 24

"I have always wanted to do work like this but felt it was out of reach": Hopes and expectations of participating in a co-design storytelling project

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Background and objectives: Adults with disability frequently describe feeling socially disconnected, disempowered and excluded from research and policy decisions that impact their lives. Co-design approaches to research and policy present an opportunity to better hear the voice of people with disability through a collaborative process of knowledge sharing and problem solving. However, there is limited understanding of best approaches to co-design engagement with people with complex disability and cognitive/communication impairments.

Method: Using a qualitative research design, interviews were conducted with nine participants; three co-design facilitators and six contributors with acquired neurological disorders. The interviews were conducted prior to participation in a co-design storytelling project and sought to capture expectations and goals of participants, as well as potential fears and barriers to engagement. The purpose of the co-design project was to create capacity building tools, informed by the lived experiences of the contributors, to be shared with young people with disability living in residential aged care. Interview data were analysed using constructivist grounded theory methods, following a process of open and focused coding, with exploration of relationships between emergent themes.

Results: Key themes that emerged from the data analysis included: *Embracing the opportunity; Juggling hopes and fears; Seeking personal connection; Learning about co-design.* Co-design presented a new opportunity, with the facilitators and contributors feeling hopeful and cautious about the potential for a shift in empowerment to the contributors with disability. Participants were mindful of the potential impact of communication challenges upon the team experience, and the need for tailoring of support. Contributor participants with disability looked forward to connecting with others with similar experiences, while sharing fears of raising their hopes for making new friends.

Conclusions: This study provides valuable new learning to guide future co-design projects with people with acquired neurological disorders. The findings emphasise the importance of creating opportunities to engage in empowering and collaborative work with people with lived experience of disability, while recognising the challenges of such work. Listening to and being responsive to the needs of participants is essential to the planning of co-design work.

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Using or providing allied health services within the National Disability Insurance Scheme: Co-designed tools and resources for people with disability, their families and allied health professionals working with them

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Background and Objectives: The National Disability Insurance Scheme, now implemented nationally in Australia, changes the way allied health professional (AHP) services are funded and accessed. The Scheme provides greater opportunities for, and AHP workforce demand from, people with disability considering and evaluating allied health supports over time. This research aimed to co-design tools to assist people with disability and families to assess the types of AHP services needed and services received over time, and AHPs to consider their capability to work with people with disability.

Method: The Victorian Department of Health undertook an online survey of 312 AHPs and 109 people with disability and family members. Drawing on results, an interdisciplinary project team consisting of AHPs from eight disciplines and three people with lived experience of disability and the NDIS was established. Five 1-1.5 hour focus groups were run with people with disability to co-design customised checklists for using and evaluating AHP supports. Five 1-hour focus groups were run with AHPs and peak bodies to inform design of an AHP online learning management system.

Results: Final resources are available via My Allied Health Space (www.myalliedhealthspace.org). The website can be accessed in both standard and Easy Read view, and includes tools and checklists for people with disability to consider allied health supports. Existing AHP education resources, and a customised AHP learning management system, are also provided.

Conclusion: My Allied Health Space offers co-designed, accessible information resources to assist planning and review of individual allied health needs, and supply of AHP services.

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Observable signs of concussion and cognitive screening performance in community sports

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Background: Video surveillance and detection of players with observable signs of concussion by experienced medical staff facilitates rapid on-field screening of suspected concussion in professional sports. This method, however, has not been validated in community sports where video footage is unavailable. The aim of this study was to explore the utility of observable signs of concussion to identify community male and female Australian football players with performance decrements on concussion screening measures.

Method: In this observational prospective cohort study, non-expert personnel with basic training observed live matches across a season (60 matches) for signs of concussion as outlined in the community-based Head Injury Assessment form (HIAf). Players identified to have positive signs of concussion (CoSign+) following an impact were compared to players without these signs (CoSign-). Outcome measures, the Sport Concussion Assessment Tool (SCAT3) and Cogstate, were administered at baseline and post-match.

Results: CoSign+ (n = 22) and CoSign- (n = 61) groups were similar with respect to age, sex, education, baseline mood, and concussion history. All CoSign+ players (100%; 95% CI: 84%- 100%) demonstrated clinically-significant deficits on the SCAT3 or Cogstate tasks, compared to 59% (95% CI: 46% to 71%) of CoSign- players. All CoSign+ players observed to have a blank/vacant look demonstrated clinically-significant decline on the Standardized Assessment of Concussion (SAC).

Conclusion: Detection of observable signs of concussion represents a rapid, real-time method to screen players suspected of concussion in community sports where video technology and medical personnel are rarely present. Consistent with community guidelines, it is recommended that all CoSign+ players are immediately removed from play for further concussion screening.

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Neuropsychiatric Profiles of Young Professional Male Athletes

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Background and Objectives: Recent media attention regarding the prevalence of Chronic Traumatic Encephalopathy (CTE) in AFL players who have donated to the Australian Sports Brain Bank has re-ignited public interest in the issues of sports-related head injuries in Australian athletes. Three cases of CTE were reported in retired AFL players in the last year, resulting in explicit rule changes, including mandatory post-concussion rest and non-playing periods. In the current literature, however, there is a lack of Australian data on which to make informed decisions regarding professional and recreational players. Critically, little research has explored premorbid neuropsychiatric variability and whether baseline profiles relate to the long-term impact of cumulative concussion.

Method: Deidentified, preseason, neuropsychological data were collected from 119 healthy Australian Rules Football and National Rugby League athletes aged 18 to 36 years. Participants completed The Post-Concussion Symptom Scale (PCSS), 11 pen-and-paper cognitive tasks, and The Depression Anxiety Stress Scale (DASS-21). Data were entered into hierarchical cluster analyses to: (1) determine the optimal number of cluster (subgroups) that fit the sample; and (2) assign participants to a specific cluster based on individual profiles. We then compared subgroups on demographics, concussion symptoms, concussion history, and cognitive and mood variables.

Results: Hierarchical cluster analysis determined three clusters: one with performance consistently above group means (but within 1 SD) across all domains (N = 50), another with relative cognitive weaknesses (N = 41), and a third with elevated mood symptoms (N = 28). The clusters did not differ on remote concussion history. Results suggest that healthy athletes assessed at baseline show neuropsychiatric heterogeneity, and a history of concussion is not independently predictive of cognitive performance.

Conclusions: These three distinct neuropsychiatric profiles lend further evidence for injury and recovery to be assessed relative to an athlete's own baseline. Future research should employ broad neuropsychiatric assessment when determining whether baseline variability relates to individual differences in injury and recovery. These results demonstrate that neuropsychiatric heterogeneity at baseline illustrate possible individual differences in risk for negative consequences following head injury. This has implications for both professional and recreational athletes.

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Reliability of Self-report for Injury Surveillance in Junior Australian Football

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Background and Objectives: Information about injury frequency, mechanism, and the use of protective equipment is needed to ensure effective injury reduction policies and injury prevention. Objectives were to determine the feasibility of using self-reported injury data to reliably estimate injury rates in community Australian football. Secondary objective were to assess whether self-reporting reliability differed according to player sex, age or the use of protective headgear.

Design: Prospective cohort study.

Method: Primary data collectors observed injury rates in addition to players and parents self-reporting injuries over two junior seasons.

Results: There were n =142 players aged 7-13 years old (μ = 10.65, 63% male). The overall self-report response rate was 77%. Gwet's first order agreement coefficients (AC1) indicated almost perfect agreement between players and PDCs (AC1 = .916, 95% CI =.894 – .939). Player sex, age or use of headgear did not influence agreement. Agreement varied for injured body region (AC1 = .779, 95% CI = .594 – .963), pathology (AC1 = .608, 95% CI = .388 – .829), and impact descriptor (AC1 = .557, 95% CI = .330 – .784) between players and PDCs.

Conclusions: Junior Australian football players were reliable injury reporters, however, agreement as to the injured body region, pathology and mechanism of injury were less reliable. Data suggests that self report may be a feasible method to obtain injury data. This finding may in part reflect the level of parental involvement in reporting due to their involvement and the age range of participants.

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Session 25

Neuropsychological Treatment of Persistent Post-Concussion Symptoms

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With contributions from Fedele, Bianca and Olver, John
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Synopsis of session: As the literature on management of acute concussion expands exponentially, there continues to be a dearth of work on treating the 15-20% of concussed individuals that develop persistent post-concussion symptoms over a prolonged period (longer than 10-14 days). However, by drawing on the few models of concussion available in the literature, and applying what we have learnt about the treatment of other functional neurological disorders, we have been successfully treating this illness for the past five years within a multi-disciplinary service. Most of our clients have reported a reduction in symptoms as well as improved quality of life.

This ‘how to’ session will explore our approach to assessing and treating patients with persistent post-concussion symptoms with a focus on how our assessment approach differs from a typical neuropsychology assessment. We will also discuss therapeutic techniques that are used in the clinic – cognitive behaviour therapy, exposure therapy, and acceptance and commitment therapy. This will include practical examples of how to approach different presentations and specific symptoms.
Level aimed for: Intermediate
Learning objectives: Think critically about the role of a neuropsychologist in assessing clients with post-concussion syndrome.

Learn how to deliver psycho-education about concussion and persistent symptoms using straightforward examples.

Be able to identify suitable therapeutic approaches for individuals with persistent post-concussion symptoms, depending on their symptom presentation.

Biography: Dr Harvey Jones is a Senior Clinical Neuropsychologist with four years’ experience working with clients who have sustained a mild TBI/concussion. Harvey joined the Acquired Brain Injury team at Epworth HealthCare in 2014 and since 2016 he has contributed to the growth of the concussion and mild TBI service at Epworth Hawthorn. He has developed a keen interest in the differences between managing sub-acute concussion and chronic concussion symptoms and has also recently completed a concussion study tour in the USA.
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Session 25A

Innovative Clinical Tools to Support the Management of Concussion from Recognition to Rehabilitation

Theadom, Alice[1]; Snell, Deborah[2]; Faulkner Josh[3]
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[3]Massey University, New Zealand

There is growing recognition and awareness of concussion in our communities. This is placing increased demand on health care providers to recognise, assess and treat this injury. In the current “How to Session” we aim to provide clinicians with an overview of innovative clinical tools to support the clinical management of concussion. These approaches have been informed by current concussion research in Aotearoa New Zealand. Our session aims to cover the entire spectrum of concussion management from recognition to treatment. In this first component, we will provide an overview of current evidence on initial recognition and health care pathway decision making after concussion in the community. This will include a discussion of a new tool designed to support this process, as well as to facilitate the implementation of international guidelines and standardisation of health care across a range of contexts. In the second component, we will provide an overview of current evidence regarding the impact of psychological factors on recovery after concussion. This discussion will include current thinking on the mechanisms of action, who might be most at risk and why. We will then consider how these risk factors can be efficiently identified early after injury, especially by triaging clinicians who are not psychologists. We will present findings from our current work validating a tool for triaging psychological risk. In the third and final component, we will focus on treatment with an emphasis on education. We will provide an overview of current biopsychosocial treatment approaches to concussion and introduce a newly developed educational tool, “the fuel tank model of concussion recovery”. This tool aims to assist clinicians to translate complex biopsychosocial explanations of concussion recovery to support patients to understand their injury and its ongoing management.
Level aimed for: This workshop will provide information of interest to clinicians at all levels of experience.
Learning objectives:
1. Gain an overview of factors influencing recognition of concussion in the community, as well as an increased awareness of a new tool to facilitate health care pathway decision making
2. Gain an overview of current evidence relating to psychological factors and concussion recovery, as well as an increase awareness of tools with potential for assessing psychological risk factors early after concussion to aid clinical decision making.
3. Gain an overview of current biopsychosocial treatment approaches to concussion treatment, as well as an increase awareness of an education tool to support the translation of biopsychological explanations or recovery into clinical practise.

Biographies:
Professor Alice Theadom, PhD
Alice is a Rutherford Discovery Fellow, Registered Psychologist and Director of the TBI Network. She has been running a research programme with a particular focus on concussion for more than 10 years. She has a particular interest in the factors affecting recovery following concussion and identifying ways of optimising outcome. She is currently looking at the impact of concussion on social outcomes such as long term antisocial/criminal behaviour and social relationships and how health care systems help or hinder the recovery process.
Associate Professor Deborah (Debbie) Snell, PhD
Debbie is a Research Associate Professor with the University of Otago Christchurch and works in a clinical

capacity in the clinical and neuropsychology scopes, mostly in concussion services in New Zealand. Her research focuses on psychological predictors of outcome after concussion including injury recovery beliefs and expectations, coping behaviours and fear avoidance. She is currently leading an HRC funded mixed methods study collaborating with concussion researchers from around NZ and internationally to improve the way clinical practice guidelines address psychological factors for people recovering from a concussion. She is also collaborating with Canadian concussion researchers in current intervention studies using a precision medicine approach to planning psychological interventions for people after concussion.

Dr Josh Faulkner, PhD

Josh is a Lecturer of neuropsychology at Massey University Wellington. Josh is a registered clinical psychologist and neuropsychologist who has worked in in-patient and outpatient neuro-rehabilitation services. Josh's research focuses on understanding the neuropsychological mechanisms that influence outcomes in concussion. He is particularly interested in the role of psychological flexibility and the application of Acceptance and Commitment Therapy in this population. He currently holds an HRC Clinical Research Fellowship.

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Session 26

"Fragments of the Future" – How neurodegenerative disorders shaped the landscape of memory research

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One of the crowning achievements of human evolution is our unique capacity to transcend the here and now to mentally transport ourselves to a different time, place or perspective. This ability to engage in so-called mental time travel enables us to remember the past, to anticipate and plan for the future, and to decouple from the immediate sensorium to simply let our minds wander. The relative ease with which we engage in these activities belies the incredible complexity of these cognitive processes. Neurodegenerative disorders such as semantic dementia and Alzheimer's disease offer compelling insights into the neurocognitive architecture of human memory. In this talk, I will present an overview of our work to date revealing how the progressive degeneration of distributed brain networks in dementia disrupts the capacity for memory, future thinking, and spontaneous cognition. In doing so, I hope to highlight the neurocognitive mechanisms that must be functional to support sophisticated expressions of cognition, implications of our findings for theoretical models of memory, as well as considering the impact of losing these uniquely human functions.

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Know thyself: What does it mean to be self-aware after brain injury?

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Popular psychology attaches great importance to self-awareness or understanding your own strengths and weaknesses and being observant of your thoughts and actions in the moment. These self-reflective processes are believed to contribute to better mental health and occupational functioning, and more satisfying relationships. After brain injury, self-awareness refers to the ability to accurately recognise changes in one's functioning and understand how these will affect everyday life and the future. In this context, poor self-awareness may pose a liability for successful recovery or, alternatively, protect individuals from psychological distress. In this talk I will summarise my 25 years of research on self-awareness after brain injury. This will include discussing factors influencing self-awareness, evidence of distinct awareness 'typologies' and research on the impact of self-awareness on functional and psychosocial outcomes. On balance, self-awareness is considered a positive attribute that is responsive to change through metacognitive intervention approaches. Yet, there may be circumstances in which targeting the development of self-awareness is neither necessary nor beneficial. Guidelines for clinical management and future research directions will be outlined.

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Session 27

A Positive Behaviour Support Intervention for Adults with Acquired Brain Injury and Challenging Behaviour: A Randomised Waitlist Controlled Trial

Ponsford, Jennie[1,2]; Hicks, Amelia J.[1,2]; Gould, Kate R.[1,2]; Downing, Marina G.[1,2]; Hopwood, Malcolm[3] and Feeney, Tim J.[4]
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Background and Objectives: Challenging behaviours are common and disabling consequences of acquired brain injury (ABI), causing stress for close others and disrupting community integration. Positive Behaviour Support interventions have support from case studies as a means of reducing these behaviours, but controlled trials are lacking. This study aimed to evaluate, in a randomised waitlist-controlled trial, the efficacy of a Positive Behaviour Support intervention, termed PBS+PLUS, in reducing challenging behaviours after ABI.

Method: Participants included 49 individuals with ABI and their close others. The design was a randomised waitlist-controlled trial with 12-month follow-up. The 12-month intervention involved setting collaborative goals towards a more meaningful life with the individual with ABI, and identifying and addressing barriers to achieving these, including challenging behaviours, through training, environmental supports or restructuring involving clients and close others. The primary outcome measure was the Overt Behaviour Scale (OBS). The Challenging Behaviour Self-Efficacy Scale (CBSES) was a secondary outcome, assessing Close-Others' self-efficacy in managing challenging behaviour. Data analyses involved mixed effects and negative binomial regressions examining change over time by group.

Results: On the OBS, the PBS+PLUS Intervention group showed a significant reduction in challenging behaviour over the 12-month intervention. However, the Waitlist group showed a similar degree of improvement on the OBS over the 12-month waitlist period. The Waitlist group was receiving intervention from other providers during this period. Gains continued for 8 months post-intervention. The PBS+PLUS intervention resulted in significantly greater gains in Close Others' confidence in managing challenging behaviours on the CBSES, relative to the Waitlist group which showed no such gains.

Conclusions: Whilst we cannot say this intervention is more effective than any other, the study did show that PBS+PLUS can result in significant and sustained reductions in challenging behaviour in individuals with severe ABI, and increase confidence of close others in managing difficult behaviours.

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Title: Goal Attainment Scaling used to achieve of 92% of individualised goals during Positive Behaviour Support intervention in adults with challenging behaviours after severe acquired brain injury

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Background and Objectives: Challenging behaviours after acquired brain injury (ABI) can cause distress and reduced community participation. Evidence-based interventions which result in clinically significant improvement are needed. Positive Behaviour Support (PBS) interventions, such as PBS+PLUS, are person-driven and context-sensitive approaches which aim to improve quality of life and enhance behavioural self-regulation. This study aimed to expand the understanding the empirical outcomes of a recent waitlist-controlled trial of PBS+PLUS by examining the nature and attainment of individualised and personally meaningful goals.

Method: Participants were 44 adults (75% male) with severe ABI sustained approximately nine years previously (range 0.6-26 years). Goal Attainment Scaling (GAS) was used to identify and measure individualised goals developed by trial clinicians in collaboration with the person with ABI and natural supports. Goal content was categorised using the International Classification of Function (ICF). Outcomes were reviewed and GAS levels assigned by clinicians during the 12-month intervention.

Results: GAS was used to develop 182 goals (between 1 to 7 goals per participant). The most frequent ICF categories were psychological wellbeing, interpersonal relationships, routines and self-care. Few goals specifically related to behaviour (5.5%). By the end of 12-months intervention, 91.8% of goals were achieved and 58.8% exceeded their expected outcome.

Conclusions: These findings indicate high levels of personally meaningful outcomes in a broad range of life-domains can be obtained for participants with severe ABI and challenging behaviour using PBS+PLUS. Rather than directing interventions towards reducing challenging behaviours, most individuals with ABI and their natural supports chose to focus on positive personal goals and enhancing their psychological wellbeing. Whilst these results should be considered in combination with the findings of the waitlist-controlled trial, they do contribute to the growing literature regarding the benefits of PBS for enhancing quality of life, which is arguably more important than changes on standardised outcome measures.

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"I've Never Been Positive … I Am Now". Participant Perspectives of a Positive Behaviour Support Intervention (PBS+PLUS) for Community Living Individuals with ABI and their Close Others

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Background and Objectives: Challenging behaviours are common following moderate to severe acquired brain injury (ABI). These behaviours cause relationship and community participation difficulties, and are a significant source of stress for many individuals with ABI and their close others (COs). A Positive Behaviour Support (PBS) intervention, termed PBS+PLUS, aimed to collaboratively assist individuals with ABI to build meaningful lives and self-regulate their behaviour.
Method: This study explored the perspectives of individuals with ABI and COs (family members, friends and carers) who had completed an individualised 12-month PBS+PLUS intervention. Fifty-two individuals participated in semi-structured interviews and a thematic analysis of interview transcripts was undertaken.
Results: Four interrelated themes were identified - Openness to Change, Embeddedness, Clinician Connection and Preparedness for the Future. Participant perceptions of, and engagement with, PBS+PLUS were influenced by an attitude of openness to new ideas and by the intervention itself. Achieving contextual relevance allowed the intervention to become embedded in participants' lives and the client-clinician relationship was central to participants' positive experiences. While most participants felt better equipped to cope with the future, some experienced difficulties transitioning to post-intervention life.
Conclusions: These results suggest PBS+PLUS may assist individuals with ABI to lead meaningful lives and more confidently overcome behavioural challenges, while encouraging supportive and empowered COs.
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Clinical perspectives on delivering a Positive Behaviour Support intervention (PBS+PLUS) for challenging behaviours following acquired brain injury

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Background and Objectives: Challenging behaviours are distressing sequelae for people with acquired brain injury (ABI) and their families. Positive Behaviour Support (PBS) is a collaborative approach addressing challenging behaviours. This qualitative study explored clinicians' experiences of a 12-month intervention (PBS+PLUS) for adults with ABI and their family/carers.
Method: Semi-structured interviews were conducted with eight clinicians trained in neuropsychology (*n* = 5), occupational therapy (*n* = 3), speech pathology (*n* = 2), with two clinicians trained in two disciplines. Interviews were thematically analysed (Braun & Clarke, 2006).
Results: Three themes were identified: Shifting clinical identity; Working as equals; Adapting to the environment. Participants experienced PBS+PLUS as a difficult approach to learn but one which improved their practice, increasing directness with clients and comfort with their clinical fallibility. PBS+PLUS involved giving clients equal status in the clinician–client relationship which for some clients and families was challenging. Finally, PBS+PLUS was perceived as difficult to implement in some work settings (e.g. involving high staff turnover) but other settings easily adopted the approach. Clinicians' recommendations for future implementations included thorough training and supervision, and setting of appropriate client expectations.
Conclusions: PBS+PLUS aims to successfully address challenging behaviours across the lifespan by developing a system of natural supports around the individual with ABI. This study highlighted the benefits and challenges eight clinicians perceived in delivering PBS+PLUS. For these clinicians, successful delivery of PBS+PLUS involved a shift in clinical identity and practices, and adaptation to broader process issues. Given the prevalence and impact of challenging behaviours after ABI, it is imperative to develop evidence-based community interventions that support individuals with ABI and their families; understanding clinicians' experiences of such interventions enhances the delivery of such interventions.
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Session 28

Be Pain Smart Clinic – A new model care for chronic pain management of people with brain injuries

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Synopsis of session
The session will be led by experienced pain trained clinicians, Dr Raj Anand, Pain Physician, Jane Bradshaw, pain titled physiotherapist and Regina Schultz, clinical psychologist who are working together in a new state-wide project in NSW for patients with traumatic brain injury and chronic pain, the Be Smart Pain Clinic based at Royal Rehab Hospital, Sydney. The aim of the workshop is to improve knowledge and understanding of the complexities of working with people with brain injury, as well as models, tools, case studies and resources to support assessment and management in these groups. The session will show

case new on- line resources for people with a brain injury who experience chronic pain that have been developed through the Agency for Clinical Innovation. The team will present the current evidence for pain management in people with a brain injury and reflect on their experience of working with people with a brain injury. The workshop will provide an overview of developing and implementing an integrated state-wide model of care for a specialised population with possible application into other settings. The team will also reflect on their experiences working with these populations on implementing an innovative model of service delivery.
Level aimed for: Basic, Intermediate

Learning objectives:

1. Participants will improve knowledge of assessment of pain with people with cognitive impairments from brain injury.
2. Participants will develop skills for managing pain with people with cognitive impairments from brain injury
3 Participants will be able to navigate the online resources for patients with TBI and chronic pain and use it for patient and carer education.

Biographies

Dr Regina Schultz is a Clinical Psychologist and Clinical Neuropsychologist, with more than 10 years' experience in chronic pain management. In 2008, Regina established the Reboot Pain Management Program at St Vincent's Hospital, Sydney, and in 2017, the St Vincent's Pain team and colleagues at the Clinical Research Unit for Anxiety and Depression developed the Reboot Online Pain Management program – an online multi-disciplinary pain management program. Regina completed her PhD, examining neuropsychological recovery following severe traumatic brain injury, in 2015 and she is now working for the Agency for Clinical Innovation and Royal Rehab developing a new clinical service for people who experience chronic pain following moderate to severe TBI.

Dr Raj Anand is a consultant physician in General Medicine, Rheumatology and Pain Medicine, currently working as VMO at Royal Rehab, St. Vincent's Hospital, Prince of Wales Private Hospital, Sydney and private telehealth services to remote and regional Australia. He is the medical clinical lead for the "Be Pain Smart Clinic" supporting people with pain and traumatic brain and spinal cord injury across NSW. Raj is an active member working on multiple projects with the Agency of Clinical Innovation, NSW, International Association for the Study of Pain and Australian Pain Society

Jane Bradshaw is a titled pain physiotherapist who has had over 30 years' experience in working in Gerontology, Aged Care, Musculoskeletal and Chronic Pain Physiotherapy. Recent physiotherapy roles have included Nepean Hospital Chronic Pain Service and with a chronic pain telehealth service at Murrumbidgee Local Health District. She currently works at the Be Smart Pain Service at Royal Rehab and at Western Sydney Pain Centre, Penrith in chronic pain physiotherapy.
Jane is currently undertaking her Masters in health care service management at the University of Tasmania and has undertaken qualitative research in person -centred healthcare within chronic and complex health services.

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Poster Session 1

The neuropsychological profile of premenstrual mood disorders

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Background and Objectives: Sex steroid hormones, such as estrogens and progesterone, influence cognitive functioning. The menstrual cycle is a model of hormonal flux that has garnered interest in understanding hormonal influences on emotional and cognitive functioning. Premenstrual mood disorders, including premenstrual syndrome (PMS) and premenstrual dysphoric disorder (PMDD) have significant psychosocial impacts in the week(s) leading up to menstruation, but their neuropsychological profile is not well understood. The aim of this study was examine neuropsychological functioning across the menstrual cycle in females with and without premenstrual mood disorders.

Method: A narrative review of studies investigating cognition in association with the menstrual cycle in females with and without premenstrual mood disorders was conducted. Subsequently, to assess cognition across the menstrual cycle, females of a reproductive age were invited to participate in the "Hormones and the Mind" study, which involves prospective daily monitoring of menstrual cycle symptoms for two consecutive menstrual cycles; urine ovulation testing to estimate cycle phase (with blood samples collected to confirm cycle phase with hormone assays) and neuropsychological assessments completed in the follicular phase and mid-luteal phase. The daily symptom ratings were used to group women into controls (no hormone sensitivity); PMS or PMDD.

Results: Findings from the narrative review indicated limited associations between cognition and menstrual cycle phase in women without premenstrual mood disorders. In contrast, existing evidence, albeit limited, suggests women with PMDD may experience cognitive disturbances premenstrually, in the area of working memory. Preliminary results from the

Hormones and the Mind study confirm and expand the narrative review findings.

Conclusion: The menstrual cycle is a pivotal model to study how sex hormone fluctuations can alter cognition. Studies examining the menstrual cycle in healthy women have been unable to show consistent associations between cognition and menstrual cycle phase; however, women who experience premenstrual mood disorders may also be vulnerable to cognitive changes

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Chronic Fatigue Syndrome: An Examination of Latent Profiles and Functional Outcomes

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Background and objectives: Chronic Fatigue Syndrome /Myalgic Encephalomyelitis (CFS/ME) is a complex and poorly understood chronic health disorder that affects cognitive and physical functioning. The current study aims to investigate the existence of homogenous subtypes within the heterogenous disorder and explores the impact of subtype membership on health-related quality of life (HRQoL) and psychosocial outcomes.

Method: Four core symptom domains (post exertional malaise, cognitive dysfunction, sleep dysfunction and a combined neurocognitive/autonomic/immune dysfunction), taken from the DePaul Symptom Questionnaire, were included in a latent profile analysis (LPA) of 164 participants who met the Institute of Medicine (IOM) case definition criteria for CFS/ME (M_{age} = 39.97, 89% female). These groups and a demographically matched 'non-diagnostic' group of participants who had been diagnosed with CFS, but who did not meet the IOM criteria (*n* =19), and a group of individuals with acquired brain injury (ABI, *n* = 30) were compared.

Results: A profile that endorsed higher severity symptoms (*n* = 84), and another that endorsed lower severity symptoms (*n* = 80) were derived in the LPA. Using mixed models analyses, the higher severity profile and ABI participants were found to have poorer HRQoL (Short-Form Health Survey (SF-36)) and psychosocial functioning (Sydney Psychosocial Reintegration Survey), than the lower severity profile (*n* = 80), and the non-diagnostic group. The lower severity profile was found to have poorer physical functioning and mental health than the non-diagnostic group. A similar pattern was detected in depressive symptomology (Hospital Anxiety and Depression Scale), with all clinical groups also reporting higher levels of depression than a demographically matched healthy control group (*n* = 37).

Conclusions: These results suggest the presence of homogenous subtypes within the CFS/ME disorder, beyond that which is accounted for by the current IOM case definition and all of which have quantifiable differences in functional impairments. The findings may assist in the development of tailored treatment programs, including disability support, based on profile membership.

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Getting stuck daydreaming: The role of cognitive flexibility in anxiety while mind-wandering

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Background and Objective: High levels of anxiety are often associated with impairments in cognitive flexibility. Individuals with high levels of trait anxiety also have distinct thought profiles, often resulting in more repetitive negative mind-wandering. This study examined the potential role of cognitive flexibility in explaining the relationship of off-task thought (mind-wandering) profiles in anxiety.

Method: Participants comprised university students (N=268). The participants were assessed on several different questionnaires online. This included the Spielberger Trait Anxiety Inventory, Penn State Worry Questionnaire, Beck Depression Inventory, Cognitive Flexibility Inventory, and Four Factor Imagination Scale. From these questionnaires we were able to obtain subjective assessments of trait anxiety, depression, worry, cognitive flexibility and a profile of mind wandering.

Results: It was found that as trait anxiety increased, there was a significant positive association with worry and depression. It was also found that as anxiety increased, mind-wanderings were more negative and more frequent. However, there were no significant differences in the complexity or directedness of the mind wandering. Further, trait anxiety scores significantly predicted a significant decrease of 41.8% in cognitive flexibility.

Conclusions: This study provides a comprehensive investigation of profiles of anxiety and mind wandering assessed dimensionally across anxiety. Further, these findings highlight the role that cognitive flexibility plays in anxiety.

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Effect of mindfulness meditation and coping strategies on affect and depression symptomatology

among medical students during national lockdown - a prospective, non-randomised controlled trial

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Background and Objectives: Lockdown due to coronavirus disease 2019 (COVID-19) has imposed conditions of quarantine and social isolation on large portions of the UK population. The mental health risks associated with these conditions varies by demographic but it is likely that widely-accessible and effective strategies that do not violate the rules of lockdown may be required. The purpose of the present study was to investigate the effects of brief app-based sessions of mindfulness meditation (MM) and utilisation of either problem-focused (PFC) or emotion-focused coping (EFC) styles on positive affect (PA), negative affect (NA) and depression symptomatology during nationwide lockdown.
Method: This study enrolled 19 medical students to undergo a 10-minute MM intervention. These same students were also divided into either PFC or EFC groups. Affect was measured using the positive and negative affect schedule (PANAS), depression symptomatology was measured using the center for epidemiological studies-depression (CES-D) scale and the brief COPE survey was used to categorise individuals as either PFC or EFC.
Results: Analysis showed no significant between-subject interaction for MM on PA, NA or CES-D score. Analysis of coping styles showed no significant between-subject interactions in relation to PA or NA, though CES-D scores approached significance ($p=0.057$) and PFC scored significantly lower than EFC at baseline ($p=0.02$). Significant within-subject effect of time found for PA and NA across both analyses ($p<0.05$). 61.1% of cohort scored above CES-D cutoff for being considered at risk of depression.
Conclusion: These results identify a need for further work into more intensive MM interventions with larger sample sizes as well as study into stressors associated with lockdown in order to more fully establish whether PFC strategies are the most beneficial. In addition, a clearly high level of psychological distress has been implicated in this study population, which may have implications for student pastoral care during this period.
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An Encounter of a Case of Syndrome of the Trephined in Rehabilitation

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Background and aims: “Syndrome of the trephined” (ST) is a complication which occurs in patients with large skull defects following a decompressive craniectomy. This case report aims to highlight the clinical features of ST, so that rehabilitation physicians would recognize ST early in order to establish prompt and appropriate treatment.
Method: A 52-year-old female who had a history of mitral Starr-Edwards valve replacement in 1989 for rheumatic mitral regurgitation and left basal ganglia hemorrhagic stroke in 2017 was initially sent to the Emergency Department (ED) for vomiting, lethargy and reduced responsiveness after being found lying on the ground by her family. Her initial Glasgow Coma Scale was 13 which subsequently declined to 11. CT brain showed a right frontal contusion, right subdural haematoma and significant midline shift. She underwent an urgent right decompressive hemicraniectomy, evacuation of right-sided acute subdural haemorrhage and insertion of intracranial pressure monitor. She was transferred to the inpatient rehabilitation unit 1 month later. She was able to ambulate in the ward and perform her activities of daily living (ADLs) with minimum assistance. Twelve days later, the rehabilitation team noted she declined functionally with poor sitting balance and worsening of her right arm strength. She also had a right craniectomy defect with a sunken skin flap. CT brain showed a sunken appearance at the site of prior right-sided craniectomy, with an associated midline shift to the left and slight increased prominence of the left temporal horn. The neurosurgical team was updated. One week later, she underwent cranioplasty which was uneventful.
Results: After the cranioplasty, she was re-admitted into the inpatient rehabilitation unit. She improved functionally. She required mostly supervision in her ADLs and could ambulate with a quad-stick. One month later, she was discharged home with her family.
Conclusions: Rehabilitation physicians should promptly recognize the clinical features of ST and raise the discussion of earlier cranioplasty in patients after a decompressive craniectomy as significant neurological decline secondary to ST can hinder the efforts of rehabilitation.
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Unfolding cultural variances of apathy and depression: A comparison between the Vietnamese and Australians

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Background and Objectives: Apathy (i.e., motivational reductions) and depression (i.e., feelings of sadness and interest loss) are common in neurological disorders and can also be present in healthy people. Despite growing research attention on clinical manifestations and neural substrates, examinations of cultural influences on presentations of apathy and depression are lacking. This cross-cultural study aimed to investigate apathy, depression and correlations between these syndromes in Vietnamese and Australian samples.

Method: A total of 92 healthy subjects (46 Vietnamese and 46 Australians) participated in the study. The Vietnamese and Australian groups were matched based on age, education, gender and occupation (most being undergraduate students). Participants completed the Dimensional Apathy Scale (DAS) for the assessment of apathy in executive (i.e., reduced organisation and planning), emotional (i.e., affective blunting) and initiation (i.e., decreased spontaneity and purposeful actions) dimensions, and the Depression Anxiety Stress Scale-21 (DASS-21) for the examination of depression symptoms.

Results: On the DAS, the Vietnamese rated their apathy significantly greater than the Australians in the initiation dimension (p=.032, η_p^2=.05), while the two groups did not differ in executive and emotional apathy (p>.95, η_p^2<.031). Across the Vietnamese and Australian participants, emotional apathy was lower than initiation apathy (ps<.006). Emotional apathy was also lower than executive apathy in the Australians (p=.001) whereas such difference was not observed in the Vietnamese (p=.291). On the DASS-21, the Vietnamese and Australian groups showed similar levels of depression symptoms (p=.833). However, while greater depression was correlated with greater apathy in all three dimensions for the Vietnamese group (p<.018, r>.31), the Australian group had greater depression related to greater executive apathy only (p=.034, r=.271).

Conclusions: For the first time, evidence for the similarities and differences in apathy and its relationship with depressive symptoms between the Vietnamese and Australians is revealed, underscoring the importance of cultural examinations for a precision medicine approach to apathy and depression in research and clinical practice.

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The Relationship between Individual Differences in the Face-specific N170 Event-related Potentials Component and the Abilities of Face Perception and Facial Expression Recognition

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Background and Objective: Previous studies have revealed that N170, a face-specific event-related potentials (ERP) component, reflects early face perception processing and individual differences in N170 response was related to behavioral performance in face perception tasks. On the other hand, recent studies have suggested that experimental manipulation of the emotional contents of facial stimuli affect N170 response. However, whether individual differences in N170 are related to facial expression recognition ability remains unknown. This study examined the relationship between individual differences in N170 and the abilities of face perception and facial expression recognition measured in independent tasks.

Method: A total of 24 right-handed healthy adults (mean age 36.5 years) performed face detection tasks with upright and inverted faces and objects as target stimuli. During the tasks, electroencephalographic data was simultaneously recorded from nine scalp electrodes for ERP extraction. The participants also performed two behavioral tasks: 1) a simultaneous face-matching task with upright and inverted faces; and 2) a facial expression recognition task that measured the recognition threshold value for six basic emotions using a psychophysical method.

Results: Regarding face perception, there were significant positive correlations between the N170 amplitudes at the right posterior region (T6) for upright and inverted faces and the reaction times of face matching. A relatively strong positive correlation was also found between the N170 face inversion effect on the N170 amplitude at T6 and the behavioral face inversion effect on the accuracy of face matching. With respect to facial expression recognition, the N170 amplitudes at the left posterior region (T5) for upright and inverted faces were significantly correlated with the mean recognition threshold value for six facial emotions (a positive correlation). In addition, a relatively strong positive correlation was found between the right hemisphere dominance of the N170 amplitudes for faces and behavioral performance in the facial expression recognition task.

Conclusions: These results suggest that individual differences in N170 response to face stimuli are related to the abilities of face perception and facial expression recognition. Moreover, the degree of N170 lateralization of face to the right hemisphere could be used as an indicator of individual differences in facial expression recognition.

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Social cognition in female adults with Anorexia Nervosa: a systematic review.

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Background and Objectives: Deficits in interpersonal and social functioning are well established in females with Anorexia Nervosa (AN), and are thought to be key features involved in the onset and maintenance of the disease. Growing literature suggests these may be attributed to poor social cognitive processes. This systematic review evaluates whether differences in social cognition exist in adult females with AN.
Method: In accordance with PRISMA guidelines, a systematic database search was completed on Medline, PsycINFO, Scopus, Embase, and CINAHL. Articles published up to the 3rd March 2020 were retrieved and screened according to strict a priori criteria. Papers required participants with a diagnosis of AN and a healthy control group.
Results: A total of 32 studies that compared females with AN against a healthy control group using social cognitive measures and/or questionnaires were analysed. An assessment of their methodological quality and risk of bias was completed using the National Institute of Health (NIH) Quality Assessment Tool. Majority of the included studies were deemed to have low or moderate risk of bias. The result of this quality assessment was used in the interpretation of the findings. Results were mixed across many domains of social cognition, often independent of their methodological quality. Overall, the current literature weighs against a conclusive statement that impairments or differences in social cognitive processes exist in AN. Empathy appears to be intact in AN, however greater emotion regulation difficulties, elevated alexithymia and reduced emotional awareness are evident in AN. Findings relating to emotion recognition and emotional Theory of Mind were inconsistent. The nature of the task appeared to influence the domains of cognitive ToM and social perception, warranting further research.
Conclusion: These findings are discussed within the broader context of social cognitive models and AN rehabilitation. It is anticipated these findings will assist practitioners working with this population to therapeutically target the social cognitive processes which appear reduced, whilst maximising areas which are intact to promote treatment efficacy and enhance outcomes.
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Innate immunity impacts social-cognitive functioning in people with multiple sclerosis and healthy individuals: implications for IL-1ra and urinary immune markers

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Background and Objective: Social-cognitive difficulties can negatively impact interpersonal communication, shared social experience, and meaningful relationships. This pilot investigation examined the relationship between social-cognitive functioning and inflammatory biomarkers in people with multiple sclerosis (MS) and healthy individuals.
Method: Participants comprised 20 pwMS (17 relapsing-remitting, one secondary-progressive, two primary-progressive) and 20 healthy control individuals without MS, demographically-matched for sex, age, and education. PwMS were diagnosed according to the McDonald criteria. We compared the immune marker profile in serum and urine-matched samples. Social cognitive functioning was objectively assessed using The Awareness of Social Inference Test – Short (TASIT-S) and subjectively assessed using self-reports of abilities in emotion recognition, emotional empathy, and cognitive theory of mind.
Results: In people with MS and healthy individuals, there were moderate-to-large negative relationships between pro-inflammatory biomarkers (serum IL-1β, IL-17, TNF-α, IP-10, MIP-1α, and urine IP-10, MIP-1β) of the innate immune system and social-cognitive functioning. In MS, a higher serum concentration of the anti-inflammatory marker IL-1ra was associated with better social-cognitive functioning (i.e., self-reported emotional empathy and TASIT-S sarcasm detection performance). However, there were mixed findings for anti-inflammatory serum markers IL-4 and IL-10.
Conclusions: Overall, our findings highlight the important implications that inflammatory processes, sickness behaviour, and the innate immune system, have on everyday social-cognitive functioning. Considering in MS, higher serum concentration IL-1ra was associated with better social functioning, it may be possible to improve social-cognitive abilities by limiting inflammatory processes. Thus, IL-1ra may be a potential target for future clinical trials. In all participants poorer social-cognitive functioning was related to higher concentration of pro-inflammatory biomarkers with an innate immunity signature. However, there were mixed findings for anti-inflammatory biomarkers IL-4 and IL-10, such that they were negatively associated with objective social-cognitive performance, and positively related to better

self-reports of social-cognitive abilities. Further cross-sectional and longitudinal research examining relationships between inflammatory markers and social-cognitive functioning according to various disease-related factors (MS subtypes) and biological sample type (serum, urine, and cerebrospinal fluid) is warranted.
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The effects of emotional working memory training on trait anxiety

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Background and Aims: Trait anxiety is a pervasive tendency to attend to and experience fears and worries to a disproportionate degree, across various situations. Decreased vulnerability to trait anxiety has been linked to having higher working memory capacity and better emotion regulation; however, the relationship between these factors has not been well-established. This study sought to determine if participants who undergo emotional working memory training will have significantly lower trait anxiety post-training. The study also sought to determine if emotion regulation mediated the relationship between working memory training and trait anxiety
Method: An experimental group comprising of 49 participants underwent 20 days of computerized emotional working memory training, which involved viewing a continuous stream of emotionally-charged content on a 3x3 grid, and then remembering the location and color of items presented on the grid. The control group comprised of 51 participants.
Results: Participants of the experimental group had significantly lower trait anxiety compared to controls, post-training. Subsequent mediation analysis determined that working memory training capacity gains were significantly related to anxiety reduction as measured by form Y2 of the Spielberger State-Trait Anxiety Inventory (STAI-Y2). Emotion regulation, as measured by the Emotional Regulation Questionnaire (ERQ), was found not to mediate between working memory capacity gains and trait anxiety reduction.
Conclusions: Working memory capacity gains and reductions in levels of trait anxiety were observed following emotional working memory training. The study may therefore be useful in informing interventions targeted at improving working memory capacity, and reducing levels of trait anxiety. Moreover, it proposes for future research to further look into the mediating role of emotion regulation via the development or utilization of more comprehensive measures of emotion regulation
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The message isn't getting across: Brain impairment and other barriers to sustained change in alcohol use disorder

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Background and Objectives: There is a growing body of evidence that alcohol use leads to early onset dementia and other forms of cognitive impairment.
Method: This is a personal reflection based on the author's clinical experience and selective reading of literature. It is not a structured review.
Results: Hospital staff tend to be irritated when patients with alcohol dependence require readmission despite previously saying they plan to abstain. Comments suggest they assume the person was not genuine, but merely tried to make a good impression. Even if the possibility of cognitive impairment is raised, it may be difficult to arrange confirmation. CT and MRI brain reports are often focussed on detecting acute changes, such as haemorrhage, making vague comments about the possibility of cortical atrophy.
Conclusions: Treating clinicians must consider cognitive impairment when managing people with alcohol use disorder. Does late recognition of cognitive impairment interfere with prognosis? Better screening and clearer reporting of CT and MRI brain scans would help. Greater public awareness of the role of alcohol in contributing to cognitive impairment may be warranted, but this must be combined with improved understanding among health care workers. Would knowing the risk of brain impairment be more powerful than warnings about the risk of liver damage?
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Social Cognition in Adults with Attention Deficit Hyperactivity Disorder (ADHD)

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Background and Objective. Adults with ADHD have major difficulties in their social relationships where poor social cognition (SC) abilities may have a causal role. SC refers to higher cognitive processes subserving the extremely diverse and flexible social behavior. The research on this construct in ADHD adults is scarce. The objective of this study was to compare the performance in SC abilities between adults with ADHD and clinically healthy adults.
Method. Thirty-nine adults (20 to 35 years old), diagnosed with ADHD through neuropsychiatric

interviews and behavioral scales, and a control group of 33 non ADHD adults were assessed. The Social Cognition Battery (COGSOC) was applied to measure social reasoning, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) to asses emotional intelligence, the Iowa Gambling Task to measure the tendency to make risky decisions, and the Faux Pas Recognition Test (Adult Version) to assess the ability to identify mental states in social contexts or third-order theory of mind.

Results. Significant between-group differences were found in emotional intelligence, third-order theory of mind, and in social reasoning tasks as understanding of causes, and judgment.

Conclusions. Adults with ADHD show poor performance on tasks that measure CS abilities, which could be relevant to explaining the social problems described in ADHD samples such as poor marital relationships, antisocial behavior, among others.

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Poster Session 2

Effect of Cognitive Neuropsychological Intervention on Persons with Developmental Stuttering

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Background and Objectives: It is reported that people who stutter (PWS) exhibit compensatory activation in the right hemisphere rather than insufficient activation in the left auditory speech area (Kikuchi, et al. 2011; Garnett, et al. 2018). Auditory brainstem response (ABR) showed that PWS had significantly longer interpeak latencies (IPL) between waves I and V (I–V) than fluent individuals (Anzaki, et al. 2020). We report the results of an intervention for PWS that stimulated the left language area by intensively using the right ear.

Method: This study included 7 persons with developmental stuttering (6 men, 1 woman; average age 36.7 years), and 5 of 7 participated in the intervention. We created audio files of speech sounds and white noise. The 5 PWS listened to speech sounds in the right ear and white noise in the left ear for shadowing for a year. Evaluations before and after the intervention were compared using the Japanese Standardized Test for Stuttering (JSTS) (Ozawa, et al. 2013).

Results: In the intervention group, 4 of 5 PWS showed improvement in the severity of stuttering based on the frequency of core symptoms on the JSTS: 2 improved from very mild to normal, 1 improved from moderate to mild, 1 improved from severe to moderate, and 1 PWS remained mild in severity. Regarding core symptoms, 3 of 5 PWS showed significant improvement of 2 points or more in z score. In the 1 PWS with the greatest improvement from severe to moderate stuttering, ABR IPL I–V of his right ear was 0.87 milliseconds longer (3 standard deviations) than in his left ear. In the other PWS who improved, the improvement of z scores was large in reading aloud and free conversation. In the 2 PWS with no intervention, the severity worsened as measured by the JSTS.

Conclusions: In the 1 PWS with the most improved severity by the JSTS, IPL I–V of the right ear was significantly longer than the left ear, and speech stimulus input from the right ear was effective. In the other PWS with small improvements, the differences between the IPL of the right ear and the IPL of the left ear were small. In addition, in the 1 PWS in the intervention group who remained mild in severity, IPL of the right ear was shorter than that of the left ear, and the activation training from the right ear was not effective.

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A systematic review of cognitive enhancing interventions in youth with depression

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Background and objectives: Cognitive impairment is an established feature of depressive disorders in youth aged 12-25. These impairments are distressing, predict functional disability, and limit the effectiveness of psychological treatments. Cognitive enhancement using behavioural, biochemical or physical methods may be useful in depression, but studies have not been reviewed. This study aimed to systematically review the empirical evidence relating to interventions for cognitive enhancement in youth aged 12-25 with depression.

Method: PRISMA guidelines were followed. Electronic databases were searched according to pre-determined criteria. Medication-based interventions were not eligible. Risk of bias was rated using the Cochrane Collaboration's revised risk-of-bias tool. Dual screening of full articles, extraction and quality ratings occurred at each review phase.

Results: Twelve studies met the review inclusion criteria (median participant age: 20.39 years). Five studies were randomised-controlled trials (RCTs).

Sample sizes were generally small (Mean=25.17, SD=10.97). Eight studies involved behavioural interventions such as cognitive training, aerobic exercise, and education or strategy-based approaches. Four studies involved repeated Transcranial magnetic brain stimulation (rTMS). Preliminary evidence of improved cognitive test performance was found for most behavioural interventions. Consent rates were highest for exercise- and education-based interventions, indicating potentially higher levels of acceptability. Findings from rTMS trials were mixed, with only 50% showing cognitive improvement. *Some concern* of risk of bias was found in each RCT.
Conclusions: Behavioural interventions, such as cognitive training, exercise, and education/strategy-focused techniques, are promising and potentially acceptable methods of addressing cognitive impairment in youth depression. Neuro-stimulation and biochemical interventions (e.g., nutrient-based treatment) require further investigation.
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The relationship between executive functions and intelligence according to the CHC theory

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Background and Objectives: Executive functions (EFs) and intelligence have commonalities. There is a high degree of overlap when using psychometric tests to measure the two constructs. Further research is required to investigate how the specific components of the two constructs are interrelated. The current study was aimed at exploring the relationship between EFs and intelligence by examining the latent structure of the Wechsler Adult Intelligence Scale (WAIS-IV) and the Executive Functions Module from the Neuropsychological Assessment Battery (NAB). The correspondence of the two measures to the Cattell-Horn-Carroll (CHC) theory was tested.
Method: 205 healthy adults, aged 18–89 years, were administered the NAB and WAIS-IV. Confirmatory factor analysis (CFA) was employed to explore the latent constructs underlying the two test batteries.
Results: Models based on the current WAIS-IV index structure displayed worse model fit than models based on the CHC theory. In particular, factors representing broad CHC abilities comprehension knowledge (Gc), fluid reasoning (Gf), visual processing (Gv), processing speed (Gs), and working memory capacity (Gwm) proved model fit improvement. The best model fit showed a five-factor model combining the Gf and Gwm into one factor and additionally including a retrieval fluency (Gr) factor.
Conclusions: The results demonstrate substantial relationships between the WAIS-IV and the NAB Executive Functions Module and suggest a high degree of overlap between EFs and intelligence within the CHC theory. The NAB fluency tasks, however, may build a distinct EF factor represented by Gr abilities.
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Development of Brain White Matter and Math Computation Ability in Children Born Very Preterm and Full-Term

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Background and Objectives: Children born very preterm (VP; <32 weeks' gestation) typically have alterations in brain white matter (WM) and poorer math ability than full-term (FT; ≥37 weeks' gestation) peers. Cross-sectional diffusion tensor imaging studies suggest a link between WM microstructure and math in VP and FT children, though longitudinal studies using more advanced diffusion models are lacking. We aimed to analyse associations between fixel-based WM measures and math at 7 and 13 years and to investigate how WM maturation from 7 to 13 years is associated with development of math computation ability across this interval. For both aims we expected these relationships would differ between VP and FT children.

Methods: Participants completed brain magnetic resonance imaging and the Math Computation subtest of the Wide-Range Achievement Test at 7 and 13 years (n=103 VP; n=21 FT). Fixel-Based Analysis was undertaken to investigate relationships between WM fibre density (FD), fibre bundle cross-section (FC), and combined fibre density and bundle cross-section (FDC) and math, at 7 and 13 and longitudinally from 7-13.

Results: As expected, VP children had poorer maths than FT children at both timepoints, and showed less improvement from 7 to 13. FD, FC and FDC in widespread tracts, including the corpus callosum, corona radiata, corticospinal tract and inferior fronto-occipital fasciculus, were positively associated with math at 7 and 13 years. Longitudinally, faster development of FDC in the corpus callosum was associated with greater improvement in math. Associations were similar between groups.

Conclusions: VP children do not appear to have altered cross-sectional or longitudinal associations between math and white matter micro and macrostructure, compared to FT peers, despite having poorer performance. In both VP and FT children, the axonal density and cross-sectional area of major WM fibre tracts are associated with math computation ability and development in childhood.

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The double empathy problem of autism through the lens of relational mentalising

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Background and Objectives: In the past few years, more and more neuroscientists have come to understand social issues in autism from the so-called ‘double empathy problem’ framework (Milton, 2012). It reframes social issues characteristic of autism primarily as a mismatch in the way neurotypical versus autistic individuals interact, not as an issue tied to the autistic individual per se. On the basis of this notion, scholars often reject the influential Theory of Mind hypothesis, which asserts a deficit in mental state representation or ‘mindblindness’ in autism (Baron-Cohen et al., 1985). If autistic individuals have more social success when interacting with other autistic individuals, it is argued, they cannot lack mental state representation abilities altogether. Here, we reconceptualise the double empathy problem within the framework of relational mentalising (Deschrijver & Palmer, 2020): this theory puts forward that individuals on the spectrum may have difficulties solving mental conflict, with mental representation per se being intact.

Method: We performed a systematic review on and conceptual analysis of the data collected in the context of the double empathy problem. We selected empirical studies that presented participants with social stimuli obtained from autistic and from neurotypical persons (e.g., videos, facial expressions,…).

Results: We identified studies which either presented the stimuli to an autistic or to a neurotypical group (partially-crossed design); or to both an autistic and a neurotypical group (fully-crossed design). The majority of those consisted of social rating experiments, which assessed participants’ impression of the social behaviour presented. Other studies focussed for instance on emotion recognition in facial expressions. Studies using dependent measures specifically focussing on mentalising abilities were rare, and evidence for autistic individuals better understanding autistic others’ mental states was often not found (e.g., Edey et al., 2016).

Conclusions: On the basis of the empirical studies that have been published on the topic of the double empathy problem thus far, the theory of mind hypothesis of autism can hardly be rejected. The relational mentalising framework shows promise to give direction to future research efforts.

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Panic attacks and reduced breathing rate? Athletes’ endorsement of true and distractor concussion symptoms

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Background and Objectives: While sports concussion education is increasingly prevalent in collision sports, there may be fewer education initiatives in non-collision sports and noncontact sports. Nevertheless, athletes of all sports are at some risk of concussions through incidental contact with other players, equipment, etc. Thus, it is important to ensure all athletes are able to identify the common symptoms of a concussion. Consequently, our research objective was to assess a diverse sample of athletes’ knowledge of concussion symptoms and their sources of knowledge.

Method: 185 Canadian athletes (14 -32; 69.7% male) from a range of sports with differing contact levels (soccer, rugby, hockey, American football and rowing) completed the Rosenbaum Concussion Knowledge and Attitudes Survey—Student Version (RoCKAS-St). Percentages of correctly and incorrectly endorsed symptoms were calculated from a list of 16 concussion symptoms (e.g., dizziness) and distractors (e.g., weight gain). We also calculated percentages for questions

asking participants if they have received concussion education or know someone who has had a concussion.
Results: A majority (70%) of participants incorrectly endorsed the distractor ‘difficulty speaking’ as a symptom. About a third (29% and 30%, respectively) of participants incorrectly endorsed the distractors ‘panic attacks’ and ‘reduced breathing rate’ as symptoms. Only 36% of athletes reported attending a presentation (workshop, seminar, etc.) or receiving any materials (pamphlets, newsletter, etc.) on concussion. Lastly, 90% of participants reported someone close to them experiencing a concussion (most commonly a sibling). These findings did not vary by sport. **Conclusions:** Most true concussion symptoms were correctly identified by the athletes. However, a majority of the athletes believed that difficulty speaking was a symptom while approximately a third believed panic attacks and reduced breathing rate were symptoms. While it is promising that athletes are able to adequately identify the most common symptoms of a concussion (e.g., headache, difficulty remembering), there may be a need to focus education initiatives on what are not common symptoms of a concussion. Especially considering how few athletes had formally received concussion education, it may be important for future research to investigate how and where athletes are receiving their concussion knowledge as it may perhaps be more commonly through personal experience.
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The structural connectome and internalising and externalising symptoms in individuals born very preterm

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Background and Objectives: The “preterm behavioural phenotype” is characterised by symptoms related to inattention, anxiety and social difficulties. Given that white matter injury and grey matter alterations are well documented in individuals born very preterm (VP), here we applied a graph theory approach to investigate the neurobiological basis of internalising and externalising symptoms in individuals born VP.
Methods: Structural and diffusion MRI data were combined to generate structural connectomes and calculate measures of network integration and segregation at 7 (VP:73; Full-term [FT]: 17) and 13 years (VP:129; FT:44). Internalising and externalising symptoms were assessed using the Strengths and Difficulties Questionnaire administered at 7 and 13 years.
Results: At 7 years, poor network integration was associated with greater internalising symptoms, regardless of birth group (characteristic path length: $\beta = 7.222$, $p = 0.015$; global efficiency: $\beta = -4.713$, $p = 0.014$). Network integration and segregation measures were not associated with internalising at 13 years. At 13 years, associations between network integration and externalising differed by group (global efficiency: $\beta = 7.511$, $p = 0.035$), with a negative association in the FT group only ($\beta = -8.675$, $p = 0.023$). Associations between network segregation and externalising symptoms also differed by group at 13 years (local efficiency: $\beta = 63.876$, $p = 0.006$), with a negative association in the FT group only ($\beta = -62.638$, $p = 0.013$). All results persisted after adjustment for sex, age at assessment, intracranial volume and after removing participants with an IQ < 70.
Conclusions: This study provides novel insights into the neurobiological basis of preterm behavioural phenotype, highlighting the role of the structural connectome in internalising and externalising symptoms in childhood and adolescence.
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Establishing a Model of Cognitive Reserve in a Paediatric Cohort

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Background and Objectives: Cognitive reserve (CR) denotes a functional efficiency of the brain that may preserve cognitive ability in the face of neurodegenerative disease. Past research has studied the construct extensively in older adult populations, and its ability to explain interindividual variation in susceptibility to cognitive decline has been consistently demonstrated. However, there exists a relative scarcity of literature conducted with paediatric populations. The current study generated a CR index based on a residual approach, and examined its ability to predict a range of cognitive and academic outcomes in a diverse paediatric cohort, which comprised children both with and without ADHD.
Method: Archival data from $N = 120$ children ($M = 10.54$, $SD = 0.71$, 65% female, $N = 54$ with ADHD, $N = 66$ without) was obtained from the Murdoch

Children's Research Institute. Data comprised demographic information (i.e., sex and age) and MRI-based brain variables (i.e., grey matter volumes, white matter hypointensities, and hippocampal volumes). Selected cognitive variables were also collected on fluid IQ (WASI-II, Matrix Reasoning), working memory (N-back test), and sustained attention (Sustained Attention to Response Test [SART]), as well as math computation and word reading (Wide Range Achievement Test: 4th Edition [WRAT-4]). Variance in fluid IQ was decomposed into components predicted by demographic and MRI-based brain variables; the residual variance in IQ was used to operationalise CR, which was subsequently regressed onto the aforementioned cognitive and academic variables to assess criterion validity.

Results: As expected, our CR index demonstrated significant and positive associations with scores on the N-back test ($p<0.001$) and SART ($p=0.021$), as well as math computation ($p<0.001$) and word reading ($p<0.001$) of the WRAT-4. Interestingly, brain variables did not significantly predict scores in these same outcome variables, nor did age or sex.

Conclusions: Our results suggest that CR can be modelled in children using a residual approach. It may also suggest that cognitive ability and academic achievement in children is better explained by functional efficiency rather than structural integrity of the brain. Our findings may be used as a stepping stone to elucidate factors contributing to CR early in life, thereby informing preventative strategies for late-life cognitive decline, while also facilitating the expansion of CR's clinical utility to neurological disorders more common in childhood, such as ADHD.

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Understanding experiences of family-centred care for children and adolescents with acquired brain injury and their families

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Background and Objectives: Paediatric acquired brain injury (ABI) can significantly impact children/adolescents and their families, necessitating a family-centred care approach to rehabilitation. While the impacts of paediatric ABI on families are well documented, families often have unmet needs during rehabilitation. Additionally, few studies have explored family-centred care in paediatric ABI rehabilitation, resulting in a lack of research evidence to guide the implementation of this approach.

This study aimed to develop a better understanding of family-centred care from the perspectives of children/adolescents with ABI and their families in rehabilitation. This included an exploration of how they participate in rehabilitation, whether they would change anything about their participation, and how their participation has changed since the implementation of a telehealth model of service delivery.

Method: Using a qualitative research design, semi-structured interviews were conducted with five parents, two siblings, and two adolescents with ABI who had received rehabilitation within a state-wide paediatric rehabilitation service. Interview transcripts were analysed using constructivist grounded theory methods.

Results: Participants reflected on family members' participation in rehabilitation, emphasising the central role of parents/caregivers. They also described how family participation changes over the course of rehabilitation and can be influenced by family members' availability and preferences.

Rehabilitation was perceived to be centred around the needs of the child/adolescent with ABI, and participants reflected on the importance of input from the rehabilitation team as well as the family. In particular, participants valued the support provided by the rehabilitation team, describing this as 'checking-in' with both the children/adolescents with ABI and their families.

Participants also described the advantages and disadvantages of telehealth rehabilitation and provided insights into how telehealth could be integrated into routine care.

Conclusions: These findings provide insights into families' experiences of participation in paediatric ABI rehabilitation, and present implications for the implementation of family-centred care in the rehabilitation of paediatric ABI.

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Neuropsychological Treatment of Persistent Post-Concussion Symptoms.

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Synopsis of session: As the literature on management of acute concussion expands exponentially, there continues to be a dearth of work on treating the 15-20% of concussed individuals that develop post-concussion syndrome; persisting concussive symptoms over a prolonged period (longer than 10-14 days). However, by drawing on the few models of post-concussion syndrome available in the literature, and applying what we have learnt about the treatment of other functional neurological disorders, we have been successfully treating this illness for the past five years. Most of our clients have reported a reduction in symptoms as well as improved quality of life.

This 'how to' session will explore our approach to assessing and treating post-concussion syndrome, with a focus on how our assessment approach differs from a typical neuropsychology assessment. It will also discuss therapeutic techniques that are used in the clinic – cognitive behaviour therapy, exposure therapy, and acceptance and commitment therapy. This will include practical examples of how to approach different presentations of post-concussion syndrome and specific symptoms.
Level aimed for: Intermediate
Learning objectives:
Think critically about the role of a neuropsychologist in assessing clients with post-concussion syndrome.
Learn how to deliver psycho-education about post-concussion syndrome using straightforward examples.
Be able to identify suitable therapeutic approaches for individuals with post-concussion syndrome, depending on their symptom presentation.

Biography: Dr Harvey Jones is a Senior Clinical Neuropsychologist with four years' experience working with clients who have sustained a mild TBI/concussion. Harvey joined the Acquired Brain Injury team at Epworth HealthCare in 2014 and since 2016 he has contributed to the growth of the concussion and mild TBI service at Epworth Hawthorn. He has developed a keen interest in the differences between managing sub-acute concussion and chronic concussion symptoms and has also recently completed a concussion study tour in the USA.
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Demographic and Clinical Characteristics Associated with Increased Direct Healthcare Costs in Youth with Persistent Post-Concussion Symptoms: A Quantile Regression Analysis

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Background and Objectives: In approximately 30% of youth, concussion symptoms persist beyond 4 weeks from the initial injury. The emotional and physical burden in youth with these persistent post-concussion symptoms (PPCS) has been well established. However, the economic burden placed on families and the healthcare system is not well understood. The objective of the current study was to assess the demographic and clinical variables that contribute to varying healthcare costs in youth with PPCS.
Method: A retrospective chart review was conducted with 461 clients who received interdisciplinary services from a persistent concussion clinic in Toronto, Canada between 2015 to 2018. All clients were between the ages of 3 to 18 years and had experienced PPCS for at least 4 weeks. Services received included an initial assessment by a pediatrician, as well as occupational therapy, social work, physical therapy, and/or neuropsychology. The associations among demographic (e.g., age, sex, median household income) and clinical (e.g., number and duration of symptoms, number of medications, number of prior services accessed) variables with direct healthcare costs was examined using a quantile multiple regression approach. This allowed for an assessment of whether the effect of several predictors differed depending on discrete increases in levels of direct healthcare costs.
Results: Quantile regressions for direct healthcare costs at the 0.2nd quantile, 0.5th quantile (i.e., the median) and the 0.8th quantile were conducted. Demographic features such as age, sex, and household income were comparable across quantiles. There were several variables whose association with healthcare costs changed significantly across quantiles: (i) the number of symptoms; (ii) symptom duration in days, and (iii) the number of medications the youth were prescribed prior to clinic assessment. Specifically, the number of symptoms and symptom duration had an increasing effect as healthcare costs increased, while the effect of the number of medications significantly diminished with increasing costs.
Conclusions: Quantile regression provides a nuanced approach for understanding the drivers of healthcare costs in youth with PPCS, especially when the focus is on those that exert the highest amount of economic burden. Future research should investigate whether there are certain types of medication and certain types of post-concussion symptoms that predict healthcare costs.
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Padded headgear in junior and youth Australian football: player insights from a national survey

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Background and Objectives: To investigate beliefs and factors associated with padded headgear (HG) use in junior and youth Australian football.
Design: Cross sectional study using a descriptive survey.
Method: A web-based tool was used to obtain demographics, HG use, concussion history, beliefs about HG and risk taking propensity.
Results: A total of 735 players (including 190, 25.7% female) representing 206 clubs across U8-U18 age-groups participated. HG was worn by 315 players (42.9%; 95% CI; 39.3-46.4). The majority (59.5%) of HG users wore it for games only and wore it voluntarily (59.7%), as opposed to being mandated to do so. Junior players were more likely than youth players to agree to feeling safer (p <0.001) and being able to player harder while wearing HG (p <0.001). The overall population however, had a median response of neutral regarding HG users being able to play harder. Median responses were “disagree” on preferring to risk an injury than wear HG, and on experienced players not needing to wear HG. Beliefs did not differ between males and females. HG use was associated with players belonging to a club where HG was mandated for others (OR 16.10; 95%CI: 7.71-33.62, p <0.001), youth players (OR 2.79; 95%CI: 1.93-3.93, p <0.001), and female players (OR 1.57; 95% CI: 1.07-2.30, p= 0.019).
Conclusions: Club mandated culture, older age and being female were prominent variables associated with voluntary HG use. Players reported believing that HG offers protection. The importance of HG use being informed by higher levels of evidence is highlighted.
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Action video game training improves text reading accuracy, rate and comprehension in children with dyslexia: A randomized controlled trial

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Background and Objectives: Dynamic visual attention training using Action Video Games (AVGs) is a promising intervention for children with dyslexia. This study investigated the efficacy of five hours (10x30 min) of AVG training in dyslexic children (aged 8-13) using ‘Fruit Ninja’, while exploring whether increasing attentional and eye movement demands enhanced AVG effectiveness.
Method: Regular (AVG-R; *n* = 22) and enhanced AVG training (AVG+; *n* = 23) were compared to a treatment-as-usual comparison group (*n* = 19) on reading, rapid naming, eye movements and visuo-temporal processing.
Results: Playing ‘Fruit Ninja’ for only five hours significantly improved reading accuracy, rate, comprehension and rapid naming of both AVG groups, compared to the comparison group, though increasing attentional demands did not enhance AVG efficacy. Participants whose low contrast magnocellular-temporal processing improved most following AVG training also showed significantly greater improvement in reading accuracy.
Conclusions: The findings demonstrate a clear role for visual attention in reading and highlight the clinical applicability of AVGs as fun, engaging interventions for dyslexia that could be easily implemented in schools.
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Cognitive and Behavioural Attention in Children with Low-Moderate and Heavy Doses of Prenatal Alcohol Exposure: A meta-analysis and systematic review

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Background: Attention problems are thought to be a hallmark feature of prenatal alcohol exposure (PAE). Despite decades of research, these findings have

never been pooled to assess the association between PAE and the different domains of attention functioning. This systematic review and meta-analysis aimed to examine the relationships between low-moderate, binge and heavy PAE with childhood attention (encode, focus, shift, sustain and behavioural).

Methods: Study methods were conducted in accordance with PRISMA guidelines. Four databases were searched to identify relevant literature. Studies were included if they were original empirical cohort studies, used validated measures to assess attention in children between the ages of 6 and 18, included a control group whose mothers completely abstained from alcohol during pregnancy, provided a measurement of alcohol intake and reported appropriate statistical results.

Results: Thirteen studies compared children with PAE to abstinent controls. A significant adverse effect of any PAE on shifting attention (Cohen's *d*= -0.61), and a trend towards an adverse effect of heavy PAE on encoding attention (Cohen's *d*= -0.79) were identified. Compared to controls, there were trends showing that low-moderate PAE (Odds Ratio = 1.21) was associated with greater odds of behavioural attention problems. Remaining analyses were limited by insufficient studies or were non-significant.

Conclusions: In summary, a vulnerability of higher-level attention skills to PAE was found. Urgent investigation into the effects of low to moderate PAE is needed given the prevalence of this drinking pattern, trends towards behavioural attention problems, the lack of comprehensive and high-quality research and the known impacts of attention difficulties on academic and social development in children.

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Exploring Mental Health Connections Across the Lifespan in Individuals with Persistent Post-Concussion Symptoms: A Scoping Review

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Background and Objectives: Concussion is a common injury among adolescents and adults. Approximately 15-30% of cases present with persistent post-concussion symptoms (PPCS) which continue for four weeks or more post-injury in adolescents, and three months or more in adults. There is a known link between PPCS and mental health outcomes, such as depression and anxiety, as well as other changes in mood such as irritability and aggression. Hence, the focus of this scoping review is to explore the attributes of mental health outcomes between adolescents and adults experiencing PPCS. Research objectives include: (1) exploring prevalence and study characteristics that address outcomes of mental health in adolescents and adults with PPCS; and (2) comparing mental health outcomes among adolescents and adults with PPCS.

Method: Four databases, (1) Ovid MEDLINE; (2) Embase; (3) CINAHL, and (4) PsycInfo were searched. The definition of PPCS was limited to physician diagnosed or self-reported concussion, with symptoms lasting for a minimum of 4 weeks. However, search terminology of PPCS was broad, including but not limited to searches including mTBI, concussion, and PPCS. After title and abstract screening of 11,134 studies, 472 articles underwent full-text review. Article extraction included 24 papers, and results were collated and charted by mental health and "other" mood disturbance outcomes, compared between adolescent and adult findings.

Results: Of the 24 studies, 18 (75%) focused on adults, while 6 (25%) focused on adolescents. Within adults, studies focused on comorbid depression and anxiety outcomes (44.4%), depression (44.4%), and anxiety (11.1%). Two studies also encompassed other emotional outcomes (11.1%). Within adolescent studies, there was an even distribution (33.3%) of studies exploring comorbid depression and anxiety outcomes, anxiety, and depression. No studies focused on other emotional outcomes.

Conclusions: This review examines mental health concerns following PPCS and contributes to understanding psychological outcomes in those experiencing PPCS. Overall, the studies of mental health outcomes following PPCS were limited in adolescent populations, as well as lacked focus on mood disturbances such as irritability and aggression. This study highlights existing gaps in PPCS and mental health literature, and results will lead to improvements in the identification, assessment, and management of PPCS and mental health among adolescents and adults.

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Reconsidering the maternal "babybrain": Theory of Mind cognition during pregnancy and its association with the infant attachment relationship

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Background and Objectives: Pregnancy is a time of transitions with great social, physical, neurobiological, and psychological changes. While cognitive deficits during pregnancy (the so-called "babybrain") have been examined, little is known about possible

cognitive advantages. Recently, it has been discovered that there are significant and enduring structural brain changes during pregnancy in regions subserving the Theory of Mind (ToM) network (Hoekzema et al., 2016). It is hypothesized that these changes may re-organize the brain for greater efficiency and specialization in ToM processing, however little is known about ToM cognition during pregnancy. In the context of caregiving, ToM supports sensitive and attuned mother-infant interactions which are essential behaviours for infant wellbeing and the development of a secure attachment relationship. Therefore, the aim of the present study is to investigate, firstly, whether late stage pregnant women have a cognitive advantage in ToM processing compared to nulliparous control women and, secondly, whether their ToM ability during pregnancy is predictive of the attachment relationship with their infant a few months after giving birth.
Method: A community sample of 133 women completed cognitive measures of ToM, mood, and sleep quality. Approximately half the participants were in the third trimester of their first pregnancy and half were never pregnant, age and education matched control women. ToM is a multidimensional construct so four measures with good psychometric properties in healthy populations were used to capture different aspects of ToM (three objective measures and one self-report measure). As sleep and mood are known moderators of ToM, this was also measured. When the infants were a few months old, the new mothers were invited to complete self-report questionnaires measuring attachment security as well as mood.
Results and Conclusions: The results from multiple regression moderation analyses will be presented for the two main study questions. Implications for clinical practice and further research will be discussed.
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Poster Session 3

From Aussie to Aotearoa: A personal account of neuropsychology practice across the ditch.

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Background and Objectives: New Zealand (Aotearoa) does not currently have a post-graduate training program in neuropsychology. Those practising neuropsychology in New Zealand have either trained in clinical psychology and subsequently learnt neuropsychology on-the-job, completing professional development to enhance their knowledge, or have trained in neuropsychology at an institution overseas. The New Zealand Psychologists Board introduced a neuropsychology 'scope of practice' for the first time in 2017. This analysis of personal experience aims to draw out some issues for the practice of neuropsychology both in New Zealand and Australia.
Method: This is an autoethnographic qualitative study of the author's recent experience of the transition from neuropsychology public health practice in Melbourne, Australia, to Dunedin, New Zealand.
Results: The challenges and successes of practicing neuropsychology in a different framework will be examined with reference to a case example.
Conclusions: Until such time as all neuropsychologists in New Zealand have a consistent training standard behind them, the challenge will be how to provide practising neuropsychologists with the supervision and support required to ensure that core competencies are consistently upheld. At the same time, the advantages of the current flexibility in clinical psychology and neuropsychology roles, and the subsequent benefit for our patients, is an important quality that should be maintained and fostered in New Zealand, and that may benefit practice of neuropsychology in Australia.
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Rehabilitation services for people recovering from major trauma injury in rural and remote Victoria: Investigating clinician availability and accessibility

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Background and objectives: Nearly a third of all Victorians impacted by major trauma injury, including traumatic brain injury, are residents in areas considered rural or remote. As major trauma injury can lead to persistent conditions and disability for a large proportion of individuals, many survivors need prolonged rehabilitation services to support their recovery. Understanding the rehabilitation services available to major trauma survivors will help inform strategies to ensure that their needs can be met. This study aimed to outline the current availability of rehabilitation services to major trauma survivors in rural and remote Victoria, Australia, and the proportion of survivors who accessed services outside of their local area.

Method: Transport Accident Commission (TAC) service provider data, National Health Service Directory data and professional association listings provider data were combined to identify rehabilitation providers. Point-density geospatial maps were created using ArcGIS Pro to detail the distribution of rehabilitation practitioners across rural and remote areas of Victoria, Australia. Residential postcode of TAC claimants and the payments for rehabilitation services funded by the TAC were used to evaluate the proportion of major trauma survivors who accessed services outside of their local area.

Results: Geospatial maps showed that general practitioner and physiotherapy practices were relatively well distributed throughout rural and remote Victoria, while other allied health disciplines including occupational therapy, speech pathology, psychology and social work were less well represented across regional and remote areas. Many rural and remote major trauma survivors accessed service providers outside of their local region. In particular, most clients from rural and remote regions accessed social workers, psychologists and speech pathologists based in metropolitan Victoria.

Conclusions: Current findings highlight meaningful differences in service availability in rural and remote areas, with key differences in availability of different types of providers. There is clearly a need to increase the availability of rehabilitation services for people living in regional and remote areas, particularly services provided by social workers, psychologists and speech pathologists.

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Sensitivity and Specificity of the Multicultural Neuropsychological Scale (MUNS) in a heterogeneous Argentinian Sample

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Background and Objectives: Currently there are tests and cross-cultural batteries that enable neuropsychologists to conduct assessments on people from different cultures and languages, although most are only sensitive to dementias in the elderly population. The Multicultural Neuropsychological Scale (MUNS) has been developed intending to gather the desirable features of cross-cultural tests and to detect various cognitive dysfunctions in different age groups. Thus, the objective of this study was to examine the sensitivity and specificity of the main score of the MUNS for people who are cognitively impaired.

Method: The sample was comprised of 184 healthy controls and 59 cognitively impaired participants of both sexes ranging in age from 15 to 92 years (M = 38.47, SD = 20.25). The educational level was estimated through a short test of reading fluency. Years of schooling ranged between 4 and 20 (M = 13.26, SD = 3.46). Participants were administered a questionnaire on their demographics and medical illnesses, the MUNS, and a neuropsychological battery with a preset criterion for deficit. Participants were grouped as cognitively normal (CN), mild cognitive impairment (MCI), neurological diagnosis (ND), and unspecified diagnosis (UD). The MUNS score was composed of the scores of four subtests: executive functioning, verbal memory (2), and visual memory. Sensitivity and specificity values for detection of cognitive impairment were then obtained.

Results: MUNS main score ranged from 0 to 315 (M = 200.77, SD = 46.21). Sensitivity and specificity values of the MUNS main score resulted in 86.4% and 62.5%, respectively, in identifying cognitive impairment (participants with either MCI, NI, or UD, versus controls) with a cut-off score of 208. The sensitivity of the MUNS main score increased when computing it individually for detecting participants with MCI (93.8%) or ND (94.7%), whereas it decreased for UD (83.3%). In contrast, specificity decreased for MCI (59.8%) and UD (48.9%) but resulted higher for ND (62.6%).

Conclusions: The MUNS has very good psychometrics properties as a screening instrument for identifying individuals experiencing cognitive impairment. Results also suggest that the MUNS score proves to have strong sensitivity for detecting individuals with a MCI, NI, or UD. Further research is needed with specific diagnostic groups and in other countries to demonstrate the MUNS cross-cultural characteristics.

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Does the availability and utility of neuropsychological services in WA meet the needs of people with ABI (stroke and TBI) in WA?

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Background and Objective: It is conservatively estimated 48,000 people in Western Australia (WA), i.e. 1.8% of the WA population, are living with acquired brain injury (ABI). It is recognised as a leading cause of disability, and that ABI can cause profound changes in cognitive, behavioural, social, and emotional functioning. Despite the (inter)nationally

demonstrated and recommended (e.g., Stroke Foundation) role of neuropsychological input in diagnostics, treatment, rehabilitation, and predicting outcome, neuropsychological services in WA are limited, with only 37 AHPRA registered Clinical Neuropsychologists. This study aims to characterise the neuropsychological services available in WA and identify where neuropsychological services are available for people living with ABI.
Method: With ethics approval, a survey will be sent to all AHPRA registered neuropsychologists in WA, to collect data to provide a current picture of the following: 1) What is the FTE of practicing AHPRA registered Clinical Neuropsychologists in WA?; 2) Percentages for different populations they see (i.e. ABI and other); 3) Setting(s) where they practice; and 4) Main nature of their work and breakdown of their clinical hours.
Results: Findings will be presented. The availability and utility of neuropsychological services in WA will be summarised.
Conclusions: The availability and utility of WA Clinical Neuropsychologists will be discussed on the background of whether this meets the recommended neuropsychological services for people with ABI in WA. We will elaborate on the unique challenges in WA, such as geographical distance impacting access to services. This will further be discussed in the context of neuropsychology in Australia and other regions worldwide. The findings will also be explored in the context of possible Medicare and NDIS funding to improve access to neuropsychological services in WA.
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Demographics of clients and their conditions commonly seen in a neuropsychology private practice in Western Australia

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Background and Objectives: Neuropsychological services are recommended for the diagnosis, treatment, rehabilitation, and outcome prediction of a range of conditions, e.g. developmental disorders, acquired brain injury, and degenerative disorders. This includes neuropsychological assessments (NPAs), which can be conducted in public and private settings. Little is known about the client demographics and conditions commonly assessed in neuropsychology private practices in Australia. In order to get a better insight of the current client populations being neuropsychologically assessed in Western Australia (WA), this study aims to elucidate the client demographics of two recent years in a large neuropsychology private practice in WA (MindLink Psychology).
Method: Data will be used from an anonymized database of 170 clients who have undergone a neuropsychological assessment between 2018 and 2019 at MindLink Psychology. Only clients who have given consent that their data can be used for research purposes will be included in analyses. Demographic data will be analysed, including information on age, gender, years of education, referral reason, medical condition(s) and referrer profession.
Results: Findings will be presented. Percentages of client demographics, referrer professions and referral reasons will be summarised.
Conclusions: The findings will be discussed to elucidate client populations who have been seen for NPA in the private sector in the last two financial years. We will discuss which client populations are possibly underrepresented and where further raising awareness among potential referrers of the value of NPAs is indicated. The findings will also be explored in the context of possible Medicare and NDIS funding to improve access of neuropsychological services.
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Reliability and Validity of a Two-Minute Screening Tool to Identify Those at Risk of Cognitive Impairment in Substance Use Treatment

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Background and Objectives: For individuals with substance use disorder (SUD), cognitive impairment can be a barrier to treatment engagement and a risk factor for relapse, and it is thus important to identify early in treatment. However, neuropsychological assessment is not accessible for many individuals with SUD, highlighting the need for brief screening measures that can be implemented by frontline SUD treatment staff. The current study reports on the psychometric properties of the Alcohol and Drug Cognitive Enhancement (ACE) Screening Tool, a two-minute screening measure consisting of 12 yes/no questions developed to identify risk factors for cognitive impairment.
Method: Preliminary research demonstrated the correlation of risk factors with self-reported executive dysfunction in a sample of 480 individuals in residential SUD treatment. The ACE Screening Tool was trialed in a sample of 129 adults enrolled in SUD treatment and 209 controls without SUD.

Results: The ACE Screening Tool score was correlated with measures of cognition including the Montreal Cognitive Assessment, the Test of Premorbid Functioning, and Five Point Test, and the Behaviour Rating Inventory of Executive Functioning - Adult. A cut score of > 3 demonstrated excellent sensitivity (93%) for detecting cognitive impairment. Follow-up assessment in a sample of 36 adults with SUD and 40 controls demonstrated excellent test-retest reliability (ICC=.97).
Conclusions: The ACE Screening Tool functions effectively as a two-minute screening measure for cognitive impairment for those in SUD treatment, and future research should investigate the benefits of incorporating the measure into routine treatment pathways.
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Developing Reference Tables for the Overt Behaviour Scale (n=926): A Psychometric Study

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Background: Challenging behaviours are a common multi-dimensional sequelae of traumatic brain injury (TBI) as well as other neurologic insults (e.g, stroke, anoxia/hypoxia). These behaviours have significant negative impacts upon employment, relationships, community participation and can be an occupational health and safety issue for staff. A number of existing scales measure varying aspects of challenging behaviours. Few, however, have accompanying tables to enable the severity of an individual behaviour profile to be compared to reference data to inform interpretation.
Objective: To develop reference values for the Overt Behaviour Scale.
Methods: The Overt Behaviour Scale (OBS) is a 34-item scale that measures challenging behaviours across nine domains: spanning aggression (4 domains), inappropriate sexual behaviour, wandering, perseveration, inappropriate social behaviour, and problems with reduced initiation. The OBS produces a total Severity score with a range from 0 to 34. Data from four separate studies from NSW and Victoria were aggregated. Additional demographic and injury data points included sex, age at onset, time post onset and type of injury. Between group analyses were conducted to examine differences in behaviour profile among the demographic and injury data. Z- scores and T-scores were calculated for the severity scores and a set of clinical bands derived based on standard deviations (Normal <0.5 SD above average; Mild 0.5-1 SD; Moderate 1-2 SD; Severe ≥ 2 SDs).
Results: The total sample comprised 926 participants (TBI=742, stroke=74, anoxia/hypoxia = 51, other non-TBI=58) including 704 males and 221 females. Severity scores in the sample ranged from 0-19 with 231 zero scores (25%). Data was positively skewed with skewness of 1.4 and followed a leptokurtic distribution with kurtosis of 4.9. A total of 76.6% (n=709) cases fell into the normal range (scores 0-5), followed by mild (10.5%, n=97, 6-7), moderate (7.6%, n=70, 8-10) and severe (5.4%, n=50, >10). Significant differences in OBS severity scores were observed for sex, time post-onset and injury type, but not for age.
Conclusions: The reference values provide a useful comparator to better understand the relative severity of individual challenging behaviours against a large sample. The values have a range of applications to clinical practice; and service planning/evaluation as well as indexing the social and financial costs associated with such behaviours.
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Barriers and facilitators of telehealth for speech pathology before and after regular telehealth use

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Background and Objectives: Despite emerging evidence of validity and reliability, speech pathologists' uptake of telehealth has been limited and barriers remain to the effective and confident use of this service model. The COVID-19 pandemic has caused significant disruption to essential health services, including speech pathology, meaning that telehealth must now be considered as part of the suite of service delivery options. This study explored the perceived barriers and facilitators of telehealth among community paediatric speech pathologists before and after their use of a telehealth platform with an embedded standardised assessment tool.
Methods: Mixed methods questionnaires were developed and completed by speech pathologists before and after the three-month trial of the telehealth platform. Thirty-eight speech pathologists completed the pre-trial questionnaire and training in the use of telehealth platform (Coviu). Twenty-seven speech pathologists went on to use the telehealth platform and 25 of these completed the post-trial questionnaire on which subsequent qualitative and quantitative analysis was completed.

Results: Prior to using the platform, perceived barriers including technology issues, limited clinician experience and concerns around parent acceptance of the service. Potential facilitators included access to appropriate platforms, tools and resources as well as increased clinician confidence with telehealth. Following the trial, barriers to telehealth use continued to include technology barriers, particularly internet stability, and client issues including suitability for telehealth services. Facilitators for future telehealth use include access to appropriate platforms for telehealth, stable and appropriate internet connectivity, and more extensive telehealth resources for both assessment and intervention for this mode of service delivery.

Conclusions: This study indicates that experience, confidence and technology barriers including internet stability are a barrier to effective telehealth services, but that appropriate telehealth platforms, resources and experience are facilitators of uptake and successful use of telehealth. This information will be useful in developing strategies to promote uptake and effective and confident use of telehealth as a mode of service delivery for children during and beyond the pandemic, including those isolated by geographical or transport barriers.

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The factor structure of the Depression Anxiety and Stress Scales (DASS-21) in Australian adults with traumatic brain injury

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Background and objectives: Psychological distress is common following Traumatic Brain Injury (TBI), with depression being the most prevalent. The DASS-21 (Lovibond & Lovibond, 1995) is a widely used measure of psychological distress in clinical practice. A 3-factor structure for the DASS-21 has been supported in both healthy and in clinical populations but not for people with a TBI. An exploratory factor analysis suggested a very different structure, which raised the question as to whether the original structure of the DASS-21 was valid for the TBI population. This study aimed to compare the published structures of the DASS-21 in adults with severe TBI.

Method: The sample consisted of 504 of adults with moderate to severe TBI (PTA > 1 day). Archival data was collected from the data base and client files from Liverpool Hospital's Brain Injury Rehabilitation Unit. Confirmatory Factor Analysis (CFA) using AMOS' bootstrapping for model comparison method was utililised to compare factor models identified from the literature.

Results: Two of the 6 models had adequate fit using structural equation modelling. The data best fit Henry and Crawford's quadripartite model, which comprised a Depression, Anxiety and Stress factor, as well as a General Distress factor. The data also adequately fit Lovibond and Lovibond's original 3-factor model, and the internal consistencies of each factor were very good (α = 0.82–0.90).

Conclusion: This study confirms the structure and construct validity of the DASS-21 and provides support for its use as a screening tool for emotional distress in traumatic brain injury rehabilitation.

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The factor structure of the Quality of Life Inventory (QOLI) in Australian adults with traumatic brain injury and a general community sample

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Background and objectives: Quality of life is a key indicator of outcome following traumatic brain injury (TBI). Research has reported several different factor structures for the Quality of Life Inventory (QOLI, Frisch 1994). Our research compared the fit of existing factor models in Australian samples of adults with TBI and a non-clinical sample. The trajectory of recovery of the TBI group was examined on each of the QOLI's factors.

Method: Data from 901 participants with TBI was provided by the Neurotrauma Register of Tasmania. Participants with TBI were aged 16-80 years and 63% were male. Approximately 69% had mild TBI (PTA<24 hours), approximately 24% had moderate TBI (PTA >1 day, <7 days) and 7% had severe TBI. Confirmatory factor analyses (CFA) compared the fit of the data to the four models across the time points of the study. Both cross sectional and longitudinal analyses were utilised, as participants provided data at one or more of seven time-points, up to three years following injury. A similar comparison of factor structures was completed with a sample of 259 healthy adults using CFA.

Results: In both the TBI and nonclinical samples, the data best fitted a three-factor model, comprising Self-functioning and activity, Self-actualisation and Family and environment factors, and a second order Overall QOL factor. Differences in trajectory of recovery were noted between the QOLI factor scores over time following TBI. Self functioning and activity and Self-

actualisation scores, but not Family and environment scores, appeared significantly lower at 1, 3 and 6 months following TBI compared with estimated premorbid scores and scores returned 12, 24 and 36 months following injury.
Conclusions: The data best fitted the three-factor structure of the QOLI. This structure provided useful clinical information about recovery of patients' subjective quality of life following TBI. Replication of these methods and findings would increase confidence for the use of the QOLI internationally.
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The factor structure and potential utility of the Head Injury Knowledge Scale (HIKS)

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Background and objectives: International research has shown the public hold many misconceptions about traumatic brain injury (TBI). The Head Injury Knowledge Scale (HIKS, Ono, Ownsworth, & Walters, 2011) was developed as a measure of misconceptions and expectations about the effects of TBI. Additional investigation of its psychometric properties appeared warranted. The aims of this further preliminary study were to examine the factor structure of the HIKS and the relationship between psychosocial variables and factor scores.
Method: A convenience sample comprising 167 adults, of whom 65% were females, responded to an online survey including the HIKS. The two-factor HIKS structure was tested using confirmatory factor analyses and the relationships between psychosocial variables and the HIKS factors were investigated.
Results: The data was a good fit to the two-factor structure of the HIKS. All items loaded adequately onto the HIKS Over-generalisation and Minimisation factors and their internal consistencies were good α =.84 and .81). Significant differences between gender groups and for level of education were observed on the HIKS Over-generalisation scale, suggesting various groups in the community may have differing levels of knowledge of TBI.
Conclusions: This study confirmed factor structure of the HIKS was robust. The HIKS is likely to be an important measure of community understanding of TBI in future research.
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Investigating the Test of Premorbid Functioning (TOPF) in predicting Wechsler Abbreviated Scale of Intelligence – Second edition (WASI-II) scores in an Australian sample

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Background and objectives: Accurate prediction of premorbid functioning is important in neuropsychological assessment. This paper provides the results of our recent study investigating the predictive accuracy of the Test of Premorbid Functioning (TOPF) and examination of this word reading task at an item level against WASI-II scores, using Australian pronunciations.
Method: The sample of 219 healthy Australians were aged 18–82 years. Multiple regression analyses were used to replicate the TOPF and simple demographic models based on the US TOPF standardisation. Rasch analyses provided a comparison of Australian, US and UK word order from the proportion of words pronounced correctly.
Results: The variance explained in WASI-II index scores was approximately half that reported in the US standardisation study, R^2=.12 (PRI) to R^2=.33 (FSIQ-2). The accuracy of predicted WASI-II scores was also slightly less in our sample. Thirty-two words were out of place by five places or more compared with the US word order and 30 compared with the UK word order.
Conclusion: These results add to concerns about the application of the TOPF with norms developed in the US and UK in the Australian context. Clinicians are advised not to apply the five error discontinue rule when using the TOPF in the local context. Pearson Clinical Assessment is planning to complete standardisation research to support the use of the WAIS-V, WMS-V and TOPF in Australia and New Zealand. This presentation will outline plans to conduct this research in Australia and New Zealand ahead of the release of these updated test batteries.
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Computerized executive function task performance fits a lower/higher-order organization but does not predict behavioural ratings

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Background and Objectives: Component-specific (*i.e.*, lower-order) executive functions (EF) have long been theorized as the foundation of complex (*i.e.*, higher-order) EFs, implying a hierarchical organization. Computerized tasks and behavioural rating scales are the most commonly used tools to assess executive functioning across multiple levels, despite showing poor correlations with one another. Recent research suggests that computerized tasks and behaviour ratings may measure different underlying processes, reducing the conceptual clarity of EF and its measurement. The current study examined the hierarchical organization of EF and whether a hierarchical model consisting of a lower and higher-order EF factor predicted a behavioural rating composite of EF.

Method: 198 university students ages 18 to 25 (M= 20.5 years; 79% female) were recruited from a mid-sized Canadian city. Confirmatory factor analysis examined a hierarchical factor structure of six computerized cognitive tasks measuring executive functioning. Tasks were categorized as lower (Go No-Go, Local Global, n-Back) and higher-order (Raven's Progressive Matrices, Tower of London, Berg Card Sorting Task). Using SEM, both task-based factors in the model were used to predict a composite of executive behaviour measured by the BASC-2 SRP-College.

Results: The hierarchical factor model demonstrated good model fit (CFI = .95; TLI = .90; χ^2/df ratio = 1.51; RMSEA = .049, 90% CI: .00 - .10). Factor loadings ranged from .37 to .55. The lower-order factor significantly predicted the higher-order EF factor (β = .89, p = .04), supporting a hierarchical structure in EF, in which better performance in lower-order tasks predicted better performance in complex EF tasks. However, lower and higher-order EF factors did not significantly predict composite scores of executive behaviour (p > .05).

Conclusion: Significant positive associations between measurement levels (*i.e.*, lower and higher-order tasks) supports the hierarchical nature of EF. Consistent with previous research, there was no observed relationship between computerized tasks and behaviour rating scores. Findings highlight the conceptual and statistical gaps between different types of EF measurement and suggest a thoughtful reconsideration of what EF measures are specifically capturing.

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The usefullness of the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) at an inpatient psychiatric unit in New Zealand-Aotearoa

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Synopsis of session:

The session would provide some background to the research and how it developed. It would then focus on the literature review which gave substance to anecdotal findings prior to the data collection.

It provides an expose' of the data and what it said and then how it related to studies conducted in other contexts.

Finally the discussion would focus on practical implications for the service user, family and the care team and as such, implications for the use of the RBANS in the New Zealand context.

Level aimed for: Intermediate

Learning objectives:

Highlighting the impact of schizophrenia on specific neurocognitive domains

Quantifying the extent of the impacts

Implications for support and care planning

Biography:

Malcolm currently works at a rehabilitation centre at the Auckland District Health Board that utilizes the recovery model in supporting service users in their recovery journey. He has over 25 years of experience as a psychologist working also in primary care, an acute inpatient unit as well as private practice. He has worked mostly with adults in recent years but earlier, after leaving the teaching profession, he worked also with children and adolescents. He has always had a keen interest in working in culturally diverse environments originally in South Africa and in the past 12 years in New Zealand.

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Poster Session 4

Speech-Language Pathologists' Views of Using Virtual Reality for Managing Cognitive-Communication Disorders Following Traumatic Brain Injury

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Background and Objectives: Using virtual reality (VR) to support rehabilitation for communication disorders is an emerging area of research, with few studies exploring VR options for managing cognitive-communication disorders following brain injuries. There are currently no VR applications that have been specifically designed to assess or treat people who have a cognitive-communication disorder following a traumatic brain injury (TBI).

This study aims to explore the views of speech-language pathologists (SLPs) who work with people who have a TBI to generate ideas and considerations for designing VR tasks to assess and treat cognitive-communication disorders following TBI. VR researchers will also be included to provide expert advice about VR technology and its application in healthcare settings. It is important to include therapists and technology experts when designing VR tasks because understanding their ideas for tasks and perspectives regarding potential risks, facilitators and barriers to VR implementation can assist with developing VR applications that meet the specific needs of VR users.

Method: This study will use focus group methodology, which is recommended as a method of collecting data from end-users when developing a new product or service, including VR. SLPs and VR experts will participate in online focus groups to gather information relating to facilitators and barriers to VR use, VR task ideas, and considerations for using VR with people who have a TBI. Data will be de-identified, transcribed, coded and thematically analysed.

Results: Preliminary findings will be presented, outlining the clinical implications and identifying essential factors to be addressed in future research addressing the use of VR for assessment and therapy during cognitive-communicative rehabilitation after TBI.

Conclusions: It is anticipated that the findings from this study will: (a) determine potential facilitators, barriers and risks associated with the use of VR for people with cognitive-communication disorders following TBI; (b) provide insights into the potential feasibility of VR for people with cognitive-communication disorders following TBI; (c) contribute ideas to the co-design of a VR platform for assessing cognitive-communication disorders following TBI.

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Current Uses and Opinions of Virtual Reality: A Content Analysis of Twitter Data to Inform Brain Injury Rehabilitation

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Background and Objectives: The use of virtual reality (VR) for brain injury rehabilitation is an emerging area of research. Investigating the opinions and needs of VR users is recommended in order to create VR tasks that are meaningful and successful. Collecting data from social media networks such as Twitter can provide valuable and unfiltered information from a large data set to understand user behaviours and attitudes to inform product development.

A hashtag study of VR related tweets on Twitter to explore current uses and perceptions has not been previously conducted. It is essential that we explore and understand user opinions and experiences related to VR to inform VR design and to achieve successful implementation of VR in clinical practice. Collecting and analysing Twitter content presents an opportunity to explore this on a large scale and in real-time. Therefore, this study aimed to collect and analyse Twitter posts related to VR to investigate current conversational trends, uses of VR, consumer perceptions and experiences, and uses of VR in healthcare with a focus on brain injury rehabilitation.

Method: Publicly available tweets containing the hashtags #virtualreality and #VR were collected up to two times weekly for a 6-week period from July to August 2020. Tweet data was collected from Twitter users via NCapture and exported into NVivo and then Excel for analysis. Tweets were excluded if they were: (a) not about VR; (b) not written in English; (c) spam; (d) contained no obvious content; (e) duplicate tweets, or (f) outside the specified search timeframe. Included tweets were analysed using quantitative and qualitative methods.

Results: 260,715 Tweets were collected from 18,545 users. Approximately 84,500 Tweets were included for analysis following the application of exclusion criteria. Analysis to date has revealed that approximately 4% of tweets were related to VR use in healthcare, with only a small proportion related to using VR in brain injury rehabilitation. An estimated 1% of Tweets were related to user opinions about VR, featuring commentary on positive and negative views of VR applications, equipment and software.

Conclusions: Twitter is being used to discuss VR by a large community of tweeters. It is expected that the findings from this study will be useful for exploring user opinions and needs for VR, current and future uses of VR in healthcare, and for informing the development of VR applications for brain injury rehabilitation.

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Does cognitive rehabilitation combined with psychological therapy result in better functional outcomes following acquired brain injury than psychological or cognitive intervention alone? A systematic review and meta-analysis

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Background and Objectives: Survivors of acquired brain injury (ABI) experience long-term cognitive and emotional difficulties that limit participation in valued activities, yet support needs are often unmet by standard rehabilitation. Interventions evaluated in clinical trials are usually highly targeted, focusing on a specific cognitive domain or mood disturbance. Though these interventions can be effective at addressing their specific target, they do not always translate to improved activity and participation outcomes. One explanation may be that treating these difficulties separately does not account for the complex reciprocal relationship between cognition and emotion. Combined or integrated treatment approaches are increasingly popular in rehabilitation research, however it is unclear if these methods indeed produce superior outcomes. We aim to complete a systematic literature review and meta-analysis evaluating the efficacy of combined cognitive and psychological interventions compared to either intervention alone for improving activity limitation, participation restriction and quality of life after ABI.
Method: A comprehensive search strategy of five databases was collaboratively developed. Inclusion criteria are adults (age 16+ years) with a clinical diagnosis of non-progressive ABI at least one month post injury; non-pharmacological interventions that are psychological, cognitive or combined compared to any control (active, treatment as usual or waitlist); randomised controlled trials. Eligibility for inclusion and data extraction will be evaluated by two reviewers using a standardised protocol. Risk of bias will be assessed using the PEDro-P rating system, and quality of evidence will be evaluated using the grading of recommendation, assessment, development and evaluation (GRADE) approach. Publication bias will be assessed using funnel plots and fail-safe N. Effect sizes will be calculated using Hedge's g and estimated using a random effects model. Sensitivity analyses will be performed excluding high risk of bias studies.
Results: The five databases have yielded 5,010 results. Preliminary qualitative and quantitative analysis of the articles retained for review will be presented.
Conclusions: This review will serve to identify the best supported method for improving outcomes after ABI and thus guide research and clinical practice by prioritising efforts to improve activity and participation outcomes and quality of life after ABI.
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Finding focus: The process of deriving person-centred goals in a multi-component community connection program (M-ComConnect) for people with severe traumatic brain injury

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Background and Objectives: M-ComConnect is an intervention program for people living with severe traumatic brain injury (TBI). The objectives of the program are to increase social activity and social functioning (skills and behaviour), and to support people to develop and maintain satisfying social relationships in the community. The program framework incorporates four layers of goal focus (lifeworld, motivational, activity and intervention). The aim of this paper is to describe the process of deriving and shaping person-centred goals in the project.
Method: Participants were 10 adults (8 males, 2 females) aged between 24-75 years with severe TBI and loss of social connection. Each participant was supported through an individualised intervention program to participate in community-based activities and leisure pursuits. All participants were living in the community with varied levels of support. Semi-structured interviews were conducted pre-intervention by four speech pathologists and one neuropsychologist in pairs or individually. Pre-intervention interviews (n=18) were transcribed and analysed by three researchers using the inductive thematic approach of Braun and Clarke (2006).
Results: Coding of initial interview data allowed analysis of the process and verification of how person-centred goals were shaped within the M-ComConnect framework. A model of three interrelated processes was derived from this analysis. These were: (1) profile building (getting to know you), (2) building a partnership (working together) and (3) shaping the goal (finding focus). These themes were evident across all participant interviews irrespective of differences in interviewer and interviewing style. Factors relating to the individual further shaped the goal-setting process and the strategies employed by interviewers. These included participant goal certainty and degree of cognitive and communication impairment. Practical considerations and challenges encountered during the process are explored.
Conclusion: For clinicians working with people with severe TBI in the community, M-ComConnect offers a collaborative framework for shaping and focusing community-based activity goals and intervention programs.
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Survey of patient experiences of compensatory and metacognitive rehabilitation following participation in a prospective memory rehabilitation treatment program

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Background and Objectives: Prospective memory (PM) impairment is common following traumatic brain injury (TBI) impacting on independence in everyday life. Compensatory (COMP) approaches to circumvent PM problems reduce impact of PM impairment, however generalisation of compensatory strategies is impacted on by poor self-awareness of PM changes after TBI. Metacognitive skills training (MST) is a rehabilitation approach designed to facilitate self-awareness. This study surveyed people with TBI who participated in a community-based PM rehabilitation program and explored participants' satisfaction with and experience of the program components.
Method: Participants completed a 6-week outpatient PM rehabilitation program involving one-to-one, weekly sessions with an occupational therapist as part of an RCT. Eligible participants were adults with moderate-severe TBI with evidence of PM impairment on screening and were randomised to receive either COMP-MST or COMP. COMP approaches included PM education, compensatory memory aid training, organisational strategy and family training and practice of compensatory strategy use. The MST approaches included role modelling, verbal, video and experiential feedback, and prediction and self-reflection activities. All participants completed a post-intervention, customised survey which rated overall program satisfaction (1: extremely satisfied to 10: not satisfied at all), self-perceived improvement (1: much worse to 5: much better), and experience of program components (1: very effective to 5: very ineffective). Survey data were summarised and descriptively analysed.
Results: 29 COMP-MST and 15 COMP program participants completed the post-intervention survey. All participants indicated they found the program helpful and on average rated their overall satisfaction 9/10 (SD=1.3). 42 participants rated their everyday PM as improved and 2 COMP-MST participants indicated no change. COMP program components were mostly rated as either effective or very effective, by 64% of participants for timetabling and organisation activities, 80% for PM education, 86% for reviewing memory aids and habits, 90% for setting PM program goals and 91% for practising memory aid use. The most popular COMP-MST program component was a novel boardgame task designed to challenge PM (100% rated as effective). Other COMP-MST program components were mostly rated as either effective or very effective by 57% for writing in a weekly memory journal, 79% for video feedback of boardgame PM performance, 83% for making weekly predictions about PM performance; 85% for review of PM memory journal, 86% for goal progress feedback, 90% for written feedback and 97% verbal therapist feedback.
Conclusions: Participants indicated high levels of satisfaction with the program and perceived improvements in everyday PM performance following the interventions.
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Challenging Behaviours in adults with traumatic brain injury: how to cope on a daily basis

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Background and Objectives: Traumatic brain injury (TBI) can lead to multiple lifelong sequelae including behavioural changes, such as aggression (verbal or physical) and inappropriate social behaviours. Challenging Behaviours (CB) impact the social, professional and emotional spheres of individuals with TBI living in the community and their caregivers. However, in community settings, interventions to help individuals with TBI and their families cope with CB are lacking. An exploration of caregivers' coping skills is critical to identify potential interventions that could improve their ability to live with these behaviours over the years. The objectives of this study were therefore to 1) identify the behaviours considered as challenging over the long-term by both caregivers and individuals with TBI, and 2) identify strategies they use to manage these behaviours.
Method: Six semi-structured individual interviews were conducted with individuals with TBI (n=3) and caregivers (n=3). These recorded interviews were transcribed verbatim and analysed according to the

inductive qualitative approach of Miles, Huberman and Saldana (2014). Coding lists corresponding to the key elements of the interviews were created and codes were then grouped into a matrix of main themes.

Results: Behaviours considered as challenging by individuals with TBI and their caregivers include: inappropriate expression of emotions (e.g. anger or sadness), risky behaviours (e.g. drug use) as well as behaviours associated with cognitive difficulties (e.g. apathy or disinhibition). They developed and implemented various individualised strategies to manage these CB. Strategies can be implemented before, during or after the occurrence of CB. Strategies include adapting the physical, social or financial environments as well as social interactions, calling on external help, or withdrawing from a situation that could trigger a CB.

Conclusion: This study shows that caregivers and individuals with TBI have a broad perception of what a CB is and have been able to find certain strategies to manage them in their daily lives. Based on these preliminary findings, we expect that educational interventions targeting both members of these dyads could, over the long term, help reduce the impacts in the community and the associated daily burden of CB.

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From proposal to implementation: Reflections and learnings from the ABI Transitional Rehabilitation Service (ABITRS) Pilot Project

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Background and Objectives: ABITRS was funded from July 2016 as a 5-year Pilot Project to establish a community-based transitional rehabilitation service for adults with ABI in Queensland. An Optimal Transition-Specific Service Model (the Optimal Model) was developed as part of the Pilot Project funding proposal. This presentation will examine the implementation fidelity of the Pilot Project by comparing the Optimal Model with the realised implemented model (ABITRS Model of Care) during the pilot period. The current ABITRS Model of Care, the outcome of incorporating learnings from implementation of the Optimal Model, will be discussed.

Method: A process evaluation was conducted to determine the extent to which the Optimal Model was implemented as planned or, if not, reasons for modifications to the model. Progressive implementation of the Optimal Model, and the reasoning for any changes to it, was consistently discussed and documented throughout the Pilot Project. This information was collated and incorporated into the overall Pilot Project evaluation, using the categories of key features, priority areas for intervention, client eligibility criteria and staffing profile.

Results: The Optimal Model provided a comprehensive framework for the establishment of a transitional ABI service in Queensland.

All proposed key features of the Optimal Model were implemented, and in some cases expanded in response to implementation experience, including:

- development of a suite of group programs to optimise peer learning, upscale rehabilitation intensity, promote family-centric practice and complement individual rehabilitation programs;
- establishment of a Key Worker role for team case co-ordination and case management.

Identified priority areas for intervention were comprehensively addressed, with innovative developments in client-centred goal setting, family-centric practice and vocational rehabilitation.

Changes were made to the proposed staffing profile, including employment of more clinically experienced allied health professionals than originally proposed.

Conclusions: The ABITRS Pilot Project has established proof of concept for core features of the Optimal Transition-Specific Service Model and through the implementation process has refined and enhanced elements of this model. Learnings have contributed to the formulation, establishment and consolidation of the current ABITRS Model of Care during the Pilot Project phase in Queensland, and will also assist those seeking to establish a transitional ABI rehabilitation service in other contexts.

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Effectiveness of Compensatory Memory Group Training Versus Computerised Cognitive Training for Improving Memory Functioning Following Acquired Brain Injury: A Pilot Randomised Controlled Trial

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Background and Objectives: Memory problems are common, persistent and debilitating sequelae of acquired brain injury (ABI). We aimed to investigate the efficacy of two different rehabilitation approaches, restorative computerised cognitive training (CCT) and a compensatory memory skills group (MSG), for improving everyday memory functioning following an ABI.

Method: We conducted a randomised controlled trial with blinded outcome assessors. Thirty-two adults with ABI (traumatic brain injury, stroke or hypoxic brain injury) and memory complaints were randomised into either six weeks of 1) CCT (n=11), 2) MSG (n=11), or 3) a waitlist control group (n=10). All groups participated in usual rehabilitation care throughout the study. The primary outcome measure was memory-related goal attainment. Secondary outcomes were subjective and objective measures of memory functioning. Measures were completed before training, immediately after training and 6 weeks after training completion.

Results: All participants reported an improvement in their memory goals following intervention. Compared to the waitlist, the CCT group reported greater attainment of memory goals at follow-up, while there was no difference between the MSG group and controls. The CCT group also performed better on an objective prospective memory measure post-intervention, while both intervention groups reported reduced subjective memory complaints post-intervention.

Conclusions: Our results provide preliminary evidence of the benefits of both memory rehabilitation approaches in improving memory functioning following ABI, with greater support for CCT in this sample. This study provides encouraging evidence that CCT may generalise to untrained everyday memory skills, though it should be noted that participants may have received concurrent compensatory strategy training in usual care. These findings require replication with a larger sample size.

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The Acquired Brain Injury Community REhabilitation Services OuTcomes CohoRT Study (ABI-RESTaRT), 1991-2020

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Background and Objectives: The transition into the community following acute management of an acquired brain injury (ABI) is a critical part of recovery. Post-acute community care can significantly improve adjustment and recovery from an ABI. The **A**cquired **B**rain **I**njury Community **RE**habilitation **S**ervices Ou**T**comes Coho**RT** study (ABI-RESTaRT) was formed to evaluate and better understand the complex and heterogeneous needs of individuals with ABI engaging with post-acute community-based rehabilitation and disability services in Western Australia (WA), and to improve outcomes for this population with complex health and social needs. The objective of this presentation is to present background details, baseline clinical, sociodemographic and admission cohort characteristics and future research plans for the ABI-RESTaRT study.

Method: A retrospective whole-population cohort study using both internal clinical and rehabilitation data and linked administrative health data, including hospital, emergency department mental health, and mortality data. The study cohort comprises of all clients of Brightwater Care Group's community-based neurorehabilitation or disability support services with an ABI or eligible neurologic condition from inception on 15 March 1991 to 31 December 2020.

Results: The cohort consists of 1,011 individuals, 34.5% with traumatic brain injury (*n* = 353), 54.9% with non-traumatic brain injury (*n* = 555), and 10.2% with an eligible neurological disorder (*n* = 103). The mean age at admission was 45.4 years, and 67.5% of the cohort were male (*n* = 682). The cohort demonstrated significant heterogeneity, both socially and clinically, with significant differences between ABI types across a number of domains at baseline, including age, duration of hospital admission, and cause of injury.

Conclusions: ABI-RESTaRT is a complex population representing the largest post-acute community-based neurorehabilitation and disability cohort in WA to date. The unique study design provides an opportunity to develop novel research programs to better understand the changing health and social needs of individuals with ABI across time, and to evaluate and improve their outcomes and the post-acute services available to them.

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Improving person-centred practice in behaviour support within an inpatient rehabilitation setting

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Background/Objectives*:* Behaviours of concern (BOC) are common in the hospital setting and are associated with increased length of stay, likelihood of harm to patients and staff and decreased rehabilitation outcomes. Positive Behaviour Support (PBS) promotes a person-centered approach and there is evidence it can reduce BOC. Implementing PBS to its full extent can be challenging in a faster paced inpatient rehabilitation setting, including engaging in full applied behaviour analysis. As such, the process of developing PBS plans by the Psychology team at Royal Talbot

Rehabilitation Centre (RTRC), Austin Health, does not always include indepth patient and family engagement. This quality improvement project aimed to (1) understand barriers to patient and carer involvement in PBS in an inpatient rehabilitation setting and (2) implement a consistent and standardised approach to involving them in PBS.
Method*:* This project was conducted at the RTRC, Austin Health, which provides subacute acquired brain injury, orthopedic, neurological and amputee rehabilitation. We audited 14 consecutive existing behaviour plans to determine how patients and their carers were involved in PBS, and key barriers to involvement. We then trialed a new process that included a standard semi-structured interview with patients or their carers prior to developing a PBS plan. A post-implementation audit was conducted to evaluate improvement in consumer involvement.
Results: Pre-implementation, patients and their carers were involved in PBS approximately 29% (n=4) of the time. Barriers to participation were present for 64% (n=9) of the sample and included significant cognitive impairment and social isolation (e.g no carers able to assist). Following the invention, 12 consecutive plans were audited. All patients were approached and 42% (n=5) were able to complete the semi-structured interview. Their self-reported triggers and coping strategies were then included in their inpatient BSP. Key barriers remained significant cognitive impairment and social isolation, and were identified for 42% (n=5) of the sample; 17% (n=2) declined or had limited engagement.
Conclusions*:* A standardised approach to gathering self-reported triggers and coping strategies increased the involvement of patients and carers in developing BSP's in an inpatient rehabilitation setting. Significant cognitive impairment was the main reason patients were unable to directly contribute to PBS plans.
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Getting research closer to practice: Establishing an Occupational Therapy Clinician-Researcher position within a Brain Injury Rehabilitation setting

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Background and Objectives: Developing the capacity of clinicians to generate meaningful research within clinical settings is important for both healthcare consumers and the relevant professional bodies. Clinician-researchers roles are proposed as one means of achieving this. Clinician-researchers work in clinical settings and are concurrently engaged in research activity. These roles aim to closely integrate clinical practice and research and are uniquely positioned to drive 'close-to-practice' research initiatives identified by both health consumers and clinicians.
Method: A twelve-month pilot Occupational Therapy Clinician-Researcher role was created as a unique discipline-specific clinical fellowship with an integrated clinical and research focus in brain injury rehabilitation. This unique 'research by practice' approach was considered critical, to keep research close to the clinical front-line. Cooke's (2005) framework was selected to guide the development of specific role objectives and criteria for evaluation of the position's impact. Role development tasks included a position workplan based on Cooke's (2005) evidence-based framework, formulated with key stakeholders of the position. Methods of evaluation included a record of activity across the domains and levels of the framework and a record of enablers and challenges.
Results: The fellowship demonstrated impacts across all domains and levels of the research capacity building framework. Traditional research impacts were demonstrated along with broader impacts including clinical practice changes which overcame the research to practice gap. A key outcome was the development of a multidisciplinary research project derived from feedback from consumers of the brain injury rehabilitation service.
Conclusion: A clinician-researcher role within Occupational Therapy has demonstrated value to both brain injury rehabilitation clinical and research domains. Cooke's framework was useful for the intentional planning and evaluation of a time-limited fellowship position which sought to build research capacity at the clinical front line. The framework guided intentional objectives and activities that shifted focus of transitional research outcomes to more sustainable impacts for the clinical team and organisation. Future recommendations include quantification of the impact of this using objective measures that complement a research capacity building framework.
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Do I Really Have To Ask That?! Supporting the implementation of a keyworker role in interdisciplinary ABI community rehabilitation

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Background and Objectives: A key-worker role has been developed and implemented as a core component of the Acquired Brain Injury Transitional Rehabilitation Service (ABI-TRS) in Queensland. The key-worker is a member of the treating interdisciplinary team (IDT), and is the core contact and coordinator for clients, families and team-members during ABI-TRS rehabilitation. The ABI-TRS provides 12 weeks of community rehabilitation for adults and their families transitioning from hospital-to-home.

Method: The development and implementation of the key-worker role was informed by features of case-management and rehabilitation-consultant models and the ABI-TRS model of care. Following establishment of ABI-TRS clinical service in 2017, the key-worker role was revised and expanded to meet emerging service needs; this occurred within a service-delivery and quality framework. Additional team reviews and focus groups were undertaken to identify the breadth and emerging scope of key-worker activities and implementation of the key-worker role.

Results: The ABI-TRS key-worker role involves 5 main components: rehabilitation program coordination from pre-admission to discharge (involving client, family, team, funders, GP, external providers); transition support and coordination (for clients, families; involving hospital and community teams); clinical processes (e.g., comprehensive assessments, IDT assessment measures, goal setting, program documentation); providing client and family supports (including emotional supports, carer strain, mood monitoring, sexuality); and coordinating risk management. The ABI-TRS team identified the main challenges of the role were managing complex clients and situations, role overlap, other service liaison (e.g., with NDIS), workload and time requirements.

Conclusions: The key-worker role within the ABI-TRS is complex and multi-faceted, involves a broad range of clinical and non-clinical skills, and is a core component of the service. Ongoing skilling and training processes have been put in place to support team members to continue to develop confidence and skills.

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From “It was fabulous” to “What rehabilitation?”: ABI consumer experiences of ABI vocational rehabilitation in Queensland

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Background and Objectives: The majority of adults with acquired brain injury (ABI) express goals of returning to work. However, availability of services to support these goals is varied and depends upon factors including location, service access, funding and time post-injury. Within Queensland, there is no set model or framework to guide the provision of interdisciplinary vocational rehabilitation (VR). To support the development of an early ABI VR framework, consumer views and experiences of ABI VR and return to work (RTW) were sought.

Method: This qualitative study investigated the experience of community-dwelling adults with ABI (n=8) with VR and RTW in Queensland. Individuals with ABI participated in focus groups and interviews; data was analysed via thematic analysis.

Results: Five themes were identified: addressing VR in rehabilitation; facilitators of recovery and RTW; the importance and experience of working again; ABI and identity; services, systems and policies. Participants reported positive and negative experiences with VR and RTW and identified five areas for ‘ideal’ future early ABI VR services: service provision; employer liaison; education; peer mentors; and workplace supports.

Conclusions: Consumer experiences with ABI VR and RTW in Queensland are varied. Key recommendations have been identified at a clinician, service and system level for improving service delivery of ABI VR, including the development of local pathways for ABI VR and advocacy for increased service access and employment-support options.

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Communication tools for the job: Rehabilitation resources to support better workplace communication after ABI

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Background and objectives: A substantial societal cost related to Acquired Brain Injury (ABI) is underemployment. Impaired communication and interpersonal skills are a major factor in this sequela. Despite this, many people with ABI wish to return to work (RTW) post-injury, and benefit from specialised rehabilitation targeting RTW skills. For rehabilitation to be successful, therapy needs to be personalised and there must be a clear understanding of the communication requirements of their role. To do this, we developed workplace communication task analysis tools in order to capture the communication needs of a personalised work role. The tools aim to: (i) build better engagement and collaboration with clients and employers; (ii) increase vocational rehabilitation (VR) clinicians’ understanding of the communication needs in a person’s work role; (iii) enable better planning and delivery of communication RTW interventions.

Method: Evidence was translated using the Stetler Model of Research Utilisation, including: (i) understanding resources currently available that capture workplace communication needs and reviewing the literature; (ii) designing the tool; (iii) matching workplace communication to a communication assessment framework; (iv) seeking feedback; (v) putting the tool into practice and reviewing.

Results: Two communication task analysis tools were developed to determine workplace communication needs: a client version, performed as a semi-structured interview; and an employer version, completed as a checklist by employers or VR clinicians on worksite visits. These tools are being used in RTW processes in a community ABI rehabilitation service. Information collected via the tool contributes to multidisciplinary rehabilitation planning, VR documentation and has successfully informed personalised vocational focused communication therapy. Preliminary clinical experience is showing that clients who complete the semi-structured interview demonstrate increased awareness of the importance of communication in their work role. This is helping to increase motivation for communication activities in therapy and anecdotally leading to better uptake of strategies to enhance communication within the workplace.

Conclusion: The developed clinical tools have been implemented in a community ABI service and are guiding more personalised communication intervention for ABI clients with RTW goals. This presentation will showcase the tools and their use in clinical practice.

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Interdisciplinary client centred goal setting in a brain injury rehabilitation unit: A preliminary discussion.

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Background and Objectives: The Princess Alexandra Hospital PAH Brain Injury Rehabilitation Unit BIRU utilises a goal planning framework that is in keeping with the International Classification of Functioning Disability and Health (ICF; 2001). While existing rehabilitation services within BIRU are goal directed, staff recognize that goal planning practices are often led within individual disciplines and lack consistent pathways for including the client in goal planning at the level of the wider service. BIRU leadership staff identified a need to commence planning for transition to an enhanced interdisciplinary goal planning model within BIRU.

Method: A literature review was completed and benchmarking with 8 rehabilitation units was conducted to determine current evidence based recommendations for inpatient goal setting and goal planning practices across centres.

Results: A range of goal setting methods and goal outcome measures are described in the literature. Most centres have a dedicated goal facilitator who is responsible for the coordination of client goals. Overall, it appears that there is no consensus on the most appropriate method of goal setting. However, it is generally acknowledged that goal setting needs to be a collaborative process between patients, their families and the multidisciplinary team and include components of goal negotiation, goal setting, action planning and review.

Conclusions: In light of the findings the PAH BIRU aims to implement an interdisciplinary goal setting framework and develop the role of goal facilitator to support clients towards achieving their personal goals. To ensure effectiveness and patient satisfaction with BIRU's goal planning process, all clients/families will complete nominated outcome measurement and evaluation of service tools.

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Reducing life time cost of care by providing longer term rehabilitation following catastrophic traumatic brain injury at a community based residential rehabilitation service in Perth, WA. A single case study.

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Background and Objective

Catastrophic traumatic brain injury (TBI) causes complex, lifelong physical and cognitive disability, often requiring lifetime care in a permanent supported accommodation.

UK studies have shown for highly dependent patients with complex support needs, longer rehabilitation reduces lifetime cost of care and offsets rehabilitation costs.

This single case study of a 23 year old male, who was no longer deemed suitable for inpatient rehabilitation following a catastrophic TBI demonstrates the cost benefits of longer term rehabilitation at a community based residential rehabilitation service in Perth, WA.

Method

The Northwick Park Dependency Score (NPDS) and Northwick Park Care Needs Assessment were used to compare changes in the generic estimate of care hours, dependency, and weekly cost of care in the community. Changes in functional independence and performance in activities of daily living (ADL) were measured using the UK FIM+FAM, Extended ADL (EADL) and Modified Barthel Index (BI). Outcomes were compared from admission to discharge.

Results

Admission UK FIM+FAM and EADL score was 50/210 and 6/42 respectively. On discharge after 24 months in the program, FIM+FAM and EADL score was 184/210 and 19/42. BI 20 point score improved from 1 to 18. NPDS score changed from 55 on admission (very high level of care) to 7 (low level of care); a change in weekly care hours required from 63 to 21 hours; a reduction of 42 hours/week or 2184 hours/year. Using the Australian National Disability Insurance Scheme (NDIS) price guide costings,an approximate overall cost reduction of $149,030 per year. A conservative estimate lifetime cost reduction (40 years) of $6 million. This does not include ongoing cost of specialist therapists, specialist support coordination, equipment and its maintenance.

Discussion and conclusion

In an environment of scarce health resources and having to justify cost effective programs and build capacity to reduce long term supports through the NDIS, this study demonstrates the effectiveness of a longer term rehabilitation in reducing lifetime cost of care. Future studies with a larger cohort are required.

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Poster Session 5

Post traumatic amnesia duration as a predictor of cognitive outcome in a litigating, non-malingering traumatic brain injury sample

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Background and Objectives: According to DSM-5 guidelines, the duration of post-traumatic amnesia (PTA) is a primary measure of traumatic brain injury (TBI) severity. However, the literature indicates that some individuals who have sustained a mild TBI – with shorter PTA durations - have a worse long-term cognitive outcome than those who have incurred more severe TBIs. Non-injury factors, such as litigation, have been suggested as contributing to cognitive outcome. Our aim was to investigate in a litigating sample whether there was a difference in cognitive outcome for different severity levels of TBI as measured by PTA duration.

Method: To date, sixteen valid participants (non-malingering based on Test of Memory Malingering and ACS embedded measures) have been recruited from a private medicolegal neuropsychology practice. Recruitment is ongoing with an aim of collecting 50 participants. All participants were aged over 18 years of age and had sustained a TBI at least two years prior (*M* = 42.35 months, *SD* = 18.82). The details of scores comprised the difference between predicted and actual episodic memory indices from the Weschler Memory Scale - IV, the processing speed index score from the Weschler Adult Intelligence Scale - IV, perseverative responses from the Wisconsin Card Sorting Test, and total number of words generated on the Controlled Oral Word Association Test. Preliminary analysis included a MANOVA with the independent factor as the three TBI severity levels as determined by the DSM-5 PTA criteria: mild (n = 7), moderate (n = 3) , and severe (n = 7). Bonferroni-adjusted ANOVAs were conducted to determine the significance and effect size of PTA duration from each neuropsychological measure.

Results: Preliminary analysis suggested there was no statistically significant differences in overall cognitive outcome between the three levels of TBI severity as measured by PTA duration (F[12, 15]= 1.005, *p* = 0.488) with adjusted *R* squared = 0.320. Follow-up analyses were not performed due to the overall non-significant result.

Conclusions: Preliminary results support the hypothesis that TBI severity alone is not a significant predictor of cognitive outcome in a litigating sample. Due to the small sample size further investigation of this hypothesis is warranted and future research will investigate non-injury factors associated with litigation (e.g. anxiety, stress, depression, and PTSD symptoms that are reinforced by the litigation process).

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Genetic moderation following traumatic brain injury: What is it, why does it occur, and how do we address it?

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Background and Objectives: Recovery from traumatic brain injury (TBI) is influenced by the individual's genetic profile. However, genetic factors have yet to be incorporated into prognostic models. This will not be a straightforward task, as the influence of genetic factors cannot be fully understood without appreciating how they interact with other variables such as age, biological sex, and ethnicity. Researching the moderation of gene-behaviour relationships following TBI has important implications for improving understanding of biological mechanisms underlying impairment, refining prognostic models to facilitate early intervention, and developing personalised, biologically informed treatments. We therefore sought to investigate how gene-behaviour relationships following TBI may be moderated by age, biological sex, and ethnicity.

Method: We performed a narrative review focusing on three of the most highly researched genes in the TBI literature: APOE, BDNF, and COMT. Taking a broad scope, we drew from biomolecular and behavioural research within the TBI population as well as other neurological, healthy, aging, and psychiatric populations.
Results: The APOE, BDNF, and COMT genes appear to influence functional, cognitive, behavioural, and emotional outcomes after TBI, although findings are inconsistent. We identified mechanisms through which these genetic associations may be moderated by age, biological sex, and ethnicity. Mechanisms involved evolutionary biology, the dopaminergic system, estrogen, and cell-signalling pathways that mediate neuronal survival and death. Despite the proliferation of genetics research in the TBI field, very few studies have directly explored age, biological sex, ethnicity, or any other factors as moderating variables. Specific methodological recommendations for future research to advance our understanding of genetic moderation will be presented.
Conclusions: The strength and direction of genetic associations with TBI outcomes likely vary as a function of the individual's age, biological sex, and ethnicity. Until we begin directly incorporating these moderating influences into statistical analysis, our ability to use an individual's genetic code to improve patient care following TBI will be limited.
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Social Disinhibition after severe TBI: A systematic scoping review of predictors, prevalence, associated symptoms and outcomes

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Background and Objectives: It is thought that approximately one-third of survivors with severe traumatic brain injury (TBI) will develop disinhibition. The term social disinhibition refers to disinhibited behaviours that occur within social interactions. Understanding the prevalence and the nature of these problems within the population of TBI survivors is very important as it may provide clues for the prevention and treatment of post-TBI social disinhibition. Yet, very little is known about it and there is not a single study reporting on the efficacy of any intervention for reducing symptoms of social disinhibition following TBI. The present study, therefore, aimed to map the existing quantitative evidence of research related to the nature of social disinhibition following severe TBI, with a specific focus on its prevalence, predictors, associated symptoms and outcomes.
Method: We conducted a systematic scoping review of the literature following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) extension for Scoping Reviews (PRISMA-ScR). We systematically searched PubMed, MEDLINE, PsychINFO, Embase, and Scopus databases.
Results: A total of fifteen peer-reviewed articles including 1346 participants met the inclusion criteria and were included in the qualitative synthesis. The results of the study show that social disinhibition is a frequent consequence of severe TBI with its prevalence ranging between 20%-30%. Inappropriate sexual behaviour appears to be more prevalent in men and younger survivors. Rule-breaking/perseverative errors in fluency tests are significantly associated with social disinhibition. The perceived burden of patients' caregivers is a very common outcome. Many potential predictors were considered in included studies, such as partial loss of smell, history of habitual alcohol/drug use, or the location of the brain injury, however, these were only considered in single studies and therefore should be further investigated.
Conclusions: Social disinhibition is a significant consequence of severe TBI, as it impacts both the patient and their family/caregivers. The present study is the first systematic synthesis of quantitative research related to social disinhibition following severe TBI. More research is needed to understand the mechanisms of social disinhibition following TBI, in order to develop a successful treatment.
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The Relationship Between Discourse Deficits and Neuropsychological Functions After Traumatic Brain Injury

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Background and Objectives: People who have sustained a traumatic brain injury (TBI) have impaired discourse ability (Dennis,1991). The story narratives produced by individuals with TBI are normal in length, with no sign of phonological, morphological, semantic or syntactic deficits. However, their speech are frequently tangential and disorganized, and they have problems understanding indirect expressions. Because of these discourse problems, friends avoid them, they find it hard to get jobs, and it limits their ability to maintain preinjury relationships in the society (Togher, McDonalds & Code, 2014). It is recognized that their communicative difficulties are complex, and there is deep interaction between language and cognition, which comes from multi-focal nature of TBI. However, the mechanisms of the discourse process and the effect of individual cognitive (neuropsychological)

functions have not been revealed sufficiently. The present study investigated the neuropsychological functions which are related to the narrative skills of TBI patients.
Method: Twenty-one TBI patients (age=41) were included in this study. They all indicated their consent for the present study. Their cognitive ability (Mini Mental State Examination: MMSE, Trail Making Test partA: TMT-A, and partB: TMT-B, Symbol Disit Modality Test: SDMT, Wisconsin Card Sorting Test: WCST) and discourse ability were thoroughly assessed. The assessment of discourse abilities was performed using picture-story test. Story grammar and the rate of necessary words were assessed on a 6-point scale (4 stories each) according to the assessment manual. Then, they were divided into discourse intact group (who received full scores) and discourse impaired group (who lost scores). The comparisons were performed separately for each neuropsychological assessment.
Results: The performance of the discourse impaired group was significantly lower than the discourse intact group in TMT-B and SDMT ($p<0.05$).
Conclusions: We found that the neuropsychological functions which are related to the discourse ability are working memory and processing speed.
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Supporting young survivors of stroke

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Background and Objectives: Stroke is historically considered a disease of the elderly, yet one-quarter of all strokes occur in younger, working-aged adults. Although strokes in young adults tend to be milder, young survivors commonly experience adverse outcomes in a range of psychosocial domains with resultant unmet support needs. Young survivors may experience loss or change of professional, family and social roles, in ways that differ from older adults. Cognitive dysfunction is common following young stroke, yet a retrospective audit study we conducted in 2019 showed that cognition is often overlooked, with rehabilitation tending to focus on regaining functional capacity in a model designed for the management of older patients. We are now commencing a prospective, cross-sectional study which aims to characterise psychosocial outcomes and needs among younger survivors of stroke to inform the implementation of a young brain injury neuropsychological service.
Method: Participants are patients under the age of 45 who presented to the Royal Melbourne Hospital with a primary diagnosis of stroke between January 2018 and January 2020. Demographic and stroke details will be collected from medical records. Prospective questionnaires on psychosocial outcomes of stroke (including mood, subjective cognitive difficulties, fatigue, community integration, functional independence, return to work, quality of life and unmet need) will be completed by participants via phone, telehealth, paper or face-to-face with a clinician.
Results: The results of multiple and logistical regression modelling exploring which factors (including mood, subjective cognitive difficulties, fatigue and community integration) are associated with unmet need, return to work and quality of life will be discussed.
Conclusions: Characterising the nature and correlates of unmet need and return to work in young stroke survivors will inform tailored intervention strategies targeted to this cohort, addressing the paucity of psychosocial research in young stroke and informing ongoing clinical management and care.
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Apathy and Depression as Predictors of Activities of Daily Living Following Stroke and Traumatic Brain Injuries in Adults: A Meta-Analysis

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Background and Objectives: Apathy and depression are common sequelae of acquired brain injury (ABI). Apathy is a syndrome characterized by diminished motivation and purposeful behaviours. Depression is a mood disorder featuring sadness, worthlessness, anhedonia and suicidal ideation. Both are associated negatively with activities of daily living (ADL), the skills required to fulfil basic and complex physical needs. However, results of the current literature are inconsistent and based on relatively small sample sizes. Furthermore, the unique and combined effects of apathy and depression as predictors of ADL have not yet been determined. This is important as both have implications for planning rehabilitation after an ABI. The present investigation aimed to evaluate the association between apathy, depression and ADL in ABI populations.
Method: A literature search was conducted to source articles investigating the association between apathy, depression and ADL in adults with ABI. Relevant correlations and effect sizes were extracted to create a meta-analytically derived correlation matrix between apathy, depression and ADL. From these pooled effect sizes, a multiple regression was conducted with apathy and depression as independent predictors of ADL.
Results: Based on the 16 studies included (N= 1,166 to

N=1389), we estimated the following significant bivariate effects: depression and apathy (r = .53, 95% CI: .42/.63), depression and ADL (r = -.27, 95% CI: -.43/-.11), apathy and ADL (r = -.41, 95% CI: -.51/-.31). A meta-analytic mediation model found that depression had a significant indirect effect onto ADL (β = -.17, 95% CI: -.26/-.09), while apathy had a significant direct effect (β = -.34, 95% CI: -.48/-.19) onto ADL (model R2 = .16). Our results suggest 16% of the variance in ADL could be accounted for by depression and apathy. Furthermore, it appears apathy may play a more substantial unique role with respect to ADL, in comparison to depression. The implication of these result suggests apathy may cause difficulties in rehabilitation and social integration, independently of depression.

Conclusions: Overall, it appears with increasing severity, apathy and depression adversely affects engagement with ADL. These results suggest practitioners can reasonably use apathy and depression severity to predict ADL performance in ABI although the potential influence of depression on ADL may occur primarily through its influence on apathy. Thus, Interventions targeting these conditions may be a fruitful avenue for future research.

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Title: Cognitive complaint after adult civilian mild traumatic brain injury: A systematic review and meta-analysis

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Background and Objectives: Mild traumatic brain injury (mTBI) is the most common type of traumatic brain injury, with some researchers estimating it affects up to 600 people per 100,000. Approximately 20% of individuals who experience mTBI fail to return to pre-injury functioning and report ongoing symptoms. One of the most common symptoms reported are cognitive symptoms, also known as cognitive complaints (CCs). These symptoms are uniquely important in mTBI, as they are a key factor associated with return to work, and are also likely to be associated with referral to neuropsychological services. To better understand these symptoms, we conducted a systematic review and meta-analysis on the frequency and degree of CCs after adult civilian mTBI, and compared this to the degree of CCs in control groups.

Methods: The following databases were systematically searched for relevant papers: Medline, PsycINFO, Emcare, Embase, Web of Science, and Scopus. 12 studies were included in the systematic review and 5 were included in the meta-analysis. Quality assessment of each included study was conducted using a modified version of the Newcastle-Ottawa Scale. Data extraction and quality assessment were performed by two independent reviewers.

Results: The meta-analysis revealed that CCs are reported to a greater degree in mTBI than in control groups (SMD = 0.79, 95% CI 0.09 to 1.49, p = .0355). Heterogeneity between studies was high ($\tau^2 = 0.24$, 95% CI 0.04 to 2.53; $I^2 = 77.3\%$, 95% CI 45.2% to 90.6%). Effect sizes were largest when healthy controls were used as the comparison group. Similarly, the systematic review revealed that between-group differences were most often found when healthy controls, rather than injured controls, were employed. The review also showed that CCs appear to decrease over time. At the domain level, memory, attention, and processing speed symptoms were reported after injury, although other domains were not assessed.

Conclusions: CCs are greater in mTBI than in control groups overall, indicating that, in mTBI, these complaints are elevated beyond ‘normal’ levels. Despite the importance of CCs in regards to individual and societal outcome factors, there has been limited research in this area, and heterogeneity in research methodology is common. The current findings suggest that the type of control group used as a comparison may be a key factor in determining whether complaints are elevated in mTBI; this is an important area for future research.

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“Don’t Dare to Go Out”: Stroke Experiences During the COVID-19 Pandemic

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Background and Objectives: Individuals with stroke often report a myriad of changes in their daily lives that affects their quality of life. The broad aim of the study was to explore the quality of life, lived experiences and unmet needs of the individual with stroke. Issues related to the COVID-19 pandemic emerged as a salient feature in the individuals’ lived experiences. This current study presents the thematic analysis on this emerging finding.

Method: A cross-sectional design with a phenomenological approach was used in this study. Semi-structured interviews were conducted to explore the quality of life after stroke. Participants were stratified at four time-points after stroke (1, 3, 6, >12 months). 16 participants were recruited from an outpatient rehabilitation centre and 7 participants were recruited from the community. The interviews were conducted in 2020 during the COVID-19 pandemic. An inductive thematic analysis approach was used. Findings from the semi-structured interviews were analysed using NVivo 12 software.

Results: The analysis generated 4 themes: (1) Experiences across continuum and context, (2) Altered social participation, (3) Resuming valued activities and occupations, and (4) "Blessing in disguise". Individuals' experiences with stroke vary across settings, ranging from acute care to community. Fear of contracting COVID-19 hindered individuals' participation in the community. Due to restrictions imposed by the government, individuals found new ways to cope with their rehabilitation. Hopes to return to previously valued activities were demonstrated in the midst of uncertainty. "Blessing in disguise" described unexpected positive experiences as a result of the pandemic, such as increased work from home opportunities and lesser crowd in therapy.
Conclusions: This study highlighted the impact of COVID-19 on individuals' lives after stroke. Most participants described significant challenges in their lives, while a lesser proportion of participants described various opportunities and positive gains. Clinicians and healthcare providers may need to consider different modes of delivering rehabilitation during this pandemic, which may include telerehabilitation. Future studies should explore and evaluate new ways of delivering intervention in this new norm in supporting the quality of care for individuals with stroke. It is important for studies to explore the long-term impact of COVID-19 on individuals' lives after stroke.
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"My Life Is Turned Upside Down": A Systematic Review on the Lived Experiences of Stroke

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Background and Objectives: Stroke is a debilitating condition that affects one's quality of life. The aftermath of stroke is often complex and different for each individual; and it may vary across culture and context. Much of the available reviews tend to explore on the specific impact of stroke on one's life. However, stroke can have an impact on numerous aspects of an individual's life. The objective of this study is to synthesise findings from studies that illustrated the broad experiences of individuals after stroke.
Method: The Joanna Briggs Institute's (JBI) meta-aggregation approach to qualitative synthesis was used. Qualitative studies had to fulfil the following inclusion criteria: (1) adults with stroke aged 18 and above (2) explored the experience of stroke and its impact on the quality of life and (3) published in English. Combining formal search through databases and grey literature search from inception to January 2020, 3283 qualitative studies were retrieved and subjected to abstract screening (n=382). 71 studies underwent full text screening. 49 studies were identified and appraised using the JBI Critical Appraisal Checklist to confirm their eligibility.
Results: 4 themes emerged from the meta-analysis: (1) Reactions to the tangible and intangible aspects of stroke, (2) Evolving expectations, (3) Relationship with others, and (4) Managing after stroke. While certain consequences of stroke, such as reduced function, is tangible, other issues such as the disconnection between mind and body is less tangible. Individuals' expectations towards their recovery are multi-faceted. Their expectations evolve along a continuum of time, across situational context, and different transitions, such as the transition from home to inpatient. Changes in interpersonal relationships were also apparent throughout the recovery trajectory. Developing strategies to manage their post-stroke lives were subsequently expressed by many.
Conclusions: In this review, it is evident that the lived experiences of stroke are found to be a wide-ranging, and complex phenomenon. Studies included were conducted in the hospital, rehabilitation, and community settings and cannot be extrapolated to other settings such as nursing homes. As such, this highlights a potential avenue that future research could explore given that specific issues relating to different settings and timepoints could vary.
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Effect of cognitive reserve on working memory in patients with frontal lobe tumors

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Background and Objective: Cognitive reserve (CR) is the capacity to cope with cognitive impairments arising due to brain damage by neurological disease. CR is increased by intellectually enriching activities such as education, occupation, and leisure. After brain tumor resection, patients show working memory impairment because of damage to fronto-parietal networks such as superior longitudinal fascicle (SLF). To date, whether occupational experience represented as CR impacts postoperative working memory impairment in patients with frontal lobe tumors remains unknown. We hypothesized that occupational experience predicted postoperative working memory and that higher damage in the SLF was associated with poorer working memory.
Method: Twenty-seven patients who underwent tumor resection participated in this study. Interviews

were performed to examine the occupational history in all patients. Patient's occupational experience was estimated using occupational complexity index based on dictionary of occupational titles. Working memory was measured using verbal and spatial working memory tasks (verbal 2-back task, spatial 2-back task, digit span backward, and tapping span backward test).
Results: To investigate whether occupational complexity scores predict the working memory scores, multiple regression analysis were performed with occupational complexity scores as the predictor variable and with the working memory scores as the dependent variable. The results of multiple regression analysis revealed that the total scores of occupational complexity were significantly affected digit span backward scores ($\beta = 0.51$, $p < 0.05$) and verbal 2-back scores ($\beta = 0.4$, $p < 0.05$).
Conclusions: Patients who had engaged in more complex occupations showed higher performance of postoperative working memory. We found that damage to fronto-parietal white matter networks was associated with working memory impairments and occupational complexity as a CR plays a protective role against working memory impairment. Considering CR such as occupational experience will help in more accurately predicting the severity of working memory deficits and the likelihood of recovery in the postoperative period.
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Hyper- and Hyposensitivity in Patients with Brain Tumors

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Background and Objectives: Subjective sensory changes, such as hyper- and hyposensitivity, have been reported in patients with acquired brain injury (ABI). Most of the cases reported have involved changes in the visual or auditory modality, and little is known regarding changes in other modalities. The purpose of this study was to investigate whether ABI patients exhibited hyper- or hyposensitivity in the olfactory, gustatory, tactile, visual or auditory modalities.
Method: Sixty-eight patients with brain or spinal cord tumors provided visual analogue scale ratings pertaining to subjective sensory changes at two time points: after tumor onset before surgery, and after surgery. The midpoint of the scale represented “no change,” while the left and right ends represented “hypersensitive,” and “hyposensitive,” respectively. The whiskers (± 1.5 interquartile range) corresponded to “sensory change,” with points outside the whiskers being indicative of “obvious hypersensitivity” or “obvious hyposensitivity” for each modality.
Results: Before surgery, > 25% of patients reported sensory changes in the visual, auditory, and tactile modalities, whereas 12–17% reported changes in the olfactory and gustatory modalities. In addition, 66% of subjects reported sensory changes in at least one modality, but there was no significant difference in frequency between increased and decreased sensitivity. Pearson’s correlation analysis indicated a relationship between patient age and sensory changes in the visual modality ($r = .69$), but not in any other modality. After surgery, 8–17% of patients experienced sensory changes compared with preoperative levels.
Conclusions: This study showed that sensory changes can occur in patients with brain tumors, but there was no clear difference in the prevalence of hypersensitivity and hyposensitivity. As sensory changes are related to mental health, assessment and management of these changes in ABI patients is important.
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Systematic review of cognitive and behavioral outcomes following early TBI

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Background and objectives: Pediatric traumatic brain injury (TBI) is one of the leading causes of mortality and invalidity in children. Young children are particularly at risk for brain injury due to physiological factors such as weak neck muscles and disproportionate head/body weight. Sustaining a TBI early in life may be associated with worse outcomes and prognosis because injury may disrupt the typical development of emerging functions and skills. There is increasing empirical focus on the effects of early traumatic brain injuries (early TBI; i.e., before the age of 6 years) on child development, but this literature has never been synthetized comprehensively. We conducted a systematic review to document the cognitive, academic, behavioral, socio-affective and adaptive consequences of early TBI.

Methods: Four data bases (PSYCNET, Medline, CINAHL, PubMed) were systematically searched from January 1990 to September 2019 for studies relating to TBI in young children using the following keywords: preschool* or infan* or toddler* or neonat* or pediatric* or earl* or newborn* or child* AND brain injur* or head injur* or concussion* or head trauma* or brain trauma*. In phase 1, titles and abstracts were screened to retrieve peer-reviewed articles that reported empirical data from paediatric TBI. In phase 2, selected studies met the following criteria: age at injury < 6 years, inflicted or non-inflicted TBI (all type of severity), and reports on the areas of interest.

Results: Of 12 153 articles identified in the initial search, 42 were included. Children who sustain early TBI are at-risk for a range of difficulties, which are generally worse when injury is sustained at a younger age; injury severity is moderate-severe, and injury mechanisms are non-accidental.

Conclusions: Early childhood is a sensitive period for the emergence and development of new skills and behaviors and brain disruption during this time is not benign. Research, clinical management, intervention and prevention efforts should be further developed with consideration for the unique characteristics of the early childhood period.

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Understanding social disinhibition in acquired brain injury: drawing upon first-person experience.

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Background and objectives: Socially disinhibited behaviours are a common outcome of acquired brain injury (ABI). However, the experience of disinhibited behaviours in applied social contexts from the perspective of the brain injured individual and how these might differ from informants is not well understood. The purpose of this study therefore was to increase our understanding of the similarities and differences between ABI and informant perspectives of the occurrence of socially disinhibited behaviours.

Method: Sixteen participants (10 with an ABI and 6 carers/support worker informants) aged 18 years and older participated in a 45-60 minute interview. Interpretive phenomenological analysis using N-Vivo was used to analyse the interview data.

Results: Those with an ABI were often unable to recognise socially disinhibited behaviour, and overall, reported minimal difficulties. Carers, however, noted that the impact of social disinhibition on everyday life was profound, resulting in loss of employment, breakdown of relationships and disengagement from the community. Social disinhibition was also reported to occur more frequently in familiar, low-stake social situations than unfamiliar, high-stake social situations. Finally, despite individuals with an ABI reporting minimal difficulties, behaviour throughout the interviews suggested that these individuals do in fact display signs of social disinhibition.

Conclusions: The differing reports provided by individuals with an ABI and carers, combined with observations of disinhibited behaviours throughout the interviews, suggests that there may be a substantial lack of insight among those with a brain injury. Therefore, relying on informant reports to assist in the development of appropriate and targeted assessments is important.

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Piloting an interdisciplinary, outcomes based approach to Prolonged Disorders of Consciousness (PDOC) at a community based residential rehabilitation service in Perth, WA with a client with complex behavioural presentation.

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Background and Objectives: Supporting a client in PDOC comes with challenges for both staff and family. Expectations of recovery, lack of knowledge and specialized PDOC programs can be complicated by client's behavioural presentation and family's loss, grief and acceptance. The aim is to implement and follow a program to guide care and rehabilitation to produce effective results.

Method: Using an internally developed PDOC programme that incorporated use of:

- Objective Assessments in a structured timeline to monitor cognitive recovery and awareness
- Goals and outcome measures that are relevant and sensitive
- Formal and informal education for care and nursing staff
- 24/7 monitoring of arousal and behaviour and its impact on participation and behaviour
- Interdisciplinary and medical collaboration of allied, mental health, care/ nursing staff to

monitor effects of medication changes on arousal, cognition, participation and behaviour management
- Education and communication of outcomes to family

The new service development and clinical initiative was piloted with a client in PDOC with significant behavioural challenges impacting on staff ability to assist with ADLs and engage in therapy.

Results: Increased arousal and awareness with consequent increase participation in activities of daily living (ADL)s and therapy Wessex Head Injury Matrix score : comparing admission to current

Most advanced behaviours observed - from 26 to 57

Total number of behaviours observed - from 11 to 46

- Reduced adverse behaviours (monthly incidence: from 5 -16/month to 1-2 currently)
- Increased staff willingness to engage with client which increased client therapeutic time and therapy opportunities
- Better understanding of clients in PDOC - both staff and family
- Realistic expectations from family

Conclusion: By following a proper structured program with continuous communication, education and feedback between family and the treating team allows the overall benefits of rehabilitation to be achieved for clients in PDOC.

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Poster Session 6

A protocol outlining a multidisciplinary approach to preventing postoperative delirium in older adults: The PROTECT Trial

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Background and objectives: Delayed neurocognitive recovery (dNCR) after anaesthesia and surgery is common in older adults. For many people dNCR precipitates long-term cognitive impairment, functional decline or dementia. Such adverse outcomes are often proceeded by avoidable complications such as postoperative delirium (POD). Rather than pharmacological interventions, the most effective way to prevent POD and subsequent long-term neurocognitive disorders is with behavioural interventions. In this trial, we aim to reduce the incidence of POD and associated cognitive decline, in older people undergoing elective surgery, by implementing a multidisciplinary perioperative intervention.

Method: We will conduct a prospective, double-blind, pragmatic, randomised trial to compare a tailored multi-disciplinary perioperative pathway against current standard of care practices. We will recruit a total of 692 elective surgical patients aged over 65 and randomise them in a 1:1 design. Our perioperative intervention targets delirium risk reduction strategies by emphasising the importance of early mobilisation, nutrition, cognitive orientation, sensory aids and avoiding polypharmacy. To promote healthy behaviour change, we will provide all intervention participants with a tailored psychoeducation program both preoperatively (prehabilitation) and postoperatively (rehabilitation), focusing on cardiovascular and psychosocial risks for cognitive and functional decline.

Results: To assess the efficacy of our intervention we will perform neuropsychological test batteries at: baseline, three, and 12 months postoperatively. We will monitor delirium daily through the patient's admission using the 3-minute Confusion Assessment Method (3D-CAM) or, if appropriate, an adapted version for the intensive care unit (CAM-ICU).

Conclusions: Delirium is a common and debilitating postoperative complication that contributes to the cognitive and functional decline of older adults. By adopting a multidisciplinary, behavioural approach to prevention, we aim to reduce the social and economic burden of delirium and by extension cognitive decline in older Australians.

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The Cumulative Effect of Cognitive Engagement on Cognitive Function in Middle-Aged Adults

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Background and Objectives: Engagement in cognitively stimulating work and activities is proposed to slow cognitive decline and delay dementia. Few studies have considered the cumulative effect of multiple cognitively engaging factors on cognitive function. In middle-aged adults, this study aimed to determine the individual and combined associations of four cognitive engagement factors (i.e., educational attainment, occupational complexity, social engagement and cognitively stimulating leisure activities) with objectively measured cognitive performance and subjective ratings of cognitive function.

Methods: A total of 1864 cognitively normal middle-aged adults (aged 40-70) enrolled in the Healthy Brain Project, a study with an online remote assessment platform seeking to understand midlife risk factors for dementia. Cognitive engagement factors were measured by online self-report questionnaires. The Cogstate Brief Battery was used to measure cognitive domains of attention and memory. Subjective ratings of cognitive function were measured using the Cognitive Function Instrument.

Results: After controlling for age, sex, ethnicity and mood symptomatology, participants with high educational attainment or high occupational complexity performed significantly better on attention and memory tasks and reported less subjective ratings of cognitive concern. Higher participation in cognitively engaging leisure activities was significantly associated with better attention and memory performance, but not with subjective ratings of cognitive function. Social engagement was not associated with any outcome. The magnitude of these effects was small and trivial (Cohen's d ranging from 0-0.17). Participants were then classified into five groups based on whether they rated highly in 0-4 cognitive engagement factors. Compared to participants with no factors, participants scoring highly in 2 or more factors performed significantly better on the memory tasks, with the magnitude of difference moderate (Cohen's d ranging from 0.30-0.49).

Conclusion: These results suggest a cumulative relationship between high cognitive engagement across several domains of life and better memory performance in cognitively normal middle-aged adults.

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The Impact of Education on the Clock Drawing Test (CDT): A Systematic Review

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Background and Objectives: The Clock Drawing Test (CDT) is a screening tool that is often utilised in the assessment of cognitive impairment and the detection of dementia. However, issues arise as it is widely used in countries where variation in levels of education is much greater than in countries where the CDT was originally developed and validated. This highlights the importance of considering evidence that education impacts CDT performance. This systematic review therefore examined the impact of education on CDT performance.

Method: Studies were identified through searching the following databases: MEDLINE, EMBASE, PsycINFO, PubMed, Web of Science, CINAHL, Cochrane and Scopus. Papers were selected for the final review based on specified inclusion and exclusion criteria. Risk of bias was assessed using an adapted version of the Quality Assessment Tool for Systematic Observational studies (QATSO; Wong et al., 2008)

Results: 21 papers were identified from systemic database searches. Twenty (95%) studies found a relationship between education and performance on the CDT. One study found no relationship with education on CDT. Most studies were of acceptable methodological quality. Effect sizes varied considerably but were mainly medium in size.

Conclusions: There is good evidence that CDT is affected by education, specifically amongst those with little or no education. It would therefore be useful to have an alternative to the CDT that is sensitive to similar cognitive domains but that does not require minimum levels of education or literacy skills.

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Association of psychological stress with risk of mild cognitive impairment: A systematic review and meta-analysis

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Background and Objectives: With no effective disease-modifying treatments, there is a need to identify lifestyle risk factors that may prevent or delay the onset of dementia. One proposed risk factor is psychological stress. Although many studies have investigated the association between stress and dementia, fewer studies have examined this association at an earlier disease stage, before dementia pathology causes clinical cognitive impairment. The current study investigated the association between different aspects of psychological stress (including neuroticism, stressful life events and perceived stress) and the risk of mild cognitive impairment (MCI) in cognitively normal adults.

Method: The study was prospectively registered and conducted in accordance with PRISMA guidelines. PsycINFO, Embase and MEDLINE were searched for eligible observational, prospective studies from database inception to October 2020. Pooled hazard ratios (HRs) were generated using a random-effects model to separately examine each aspect of stress in relation to the risk of MCI.

Results: Of the 1607 studies screened, six were included in the qualitative review. Two of three studies examining the association between neuroticism and the risk of MCI found that neuroticism was associated with an increased risk of MCI, but could not be combined in a meta-analysis. Two of three studies examining the association between perceived stress and the risk of MCI were suitable for meta-analysis. When pooling the data, higher perceived stress was significantly associated with an increased risk of MCI (Cases/Total *N* = 207/860: hazard ratio [HR] = 1.19, 95% confidence interval [CI] = 1.03-1.38). No studies examined the association between stressful life events and the risk of MCI.

Conclusions: Higher levels of perceived stress in adulthood are associated with an increased risk of MCI. More research exploring the association of psychological stress and risk of MCI is needed, as the identification of modifiable risk factors during the preclinical phase of dementia is critical, particularly when considering interventions to slow disease progression.

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Neuropsychological functioning and discourse in individuals with early stage Vascular Dementia vs patients with early stage Alzheimer's Disease

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Background and Objectives: Individuals in the early stage of dementia may demonstrate language difficulties. The study examined cognitive and discourse performance in two dementia and two control groups.

Methods: Fourteen patients at an early stage of Vascular Dementia (VaD), 14 individuals at an early stage of Alzheimer's Disease (AD), 19 young control elderly (YE), and 29 old control elderly (OE) participated. Neuropsychological testing examined verbal and nonverbal functions, classified among the following cognitive domains: verbal memory, executive functions, reasoning, attention/working memory. Narrative discourse was elicited with two tasks of story retelling – a story and a fairytale.

Results: The AD and VaD groups performed more poorly than age-matched YE in the reasoning domain. The VaD participants overperformed patients with AD in verbal memory and reproduced more detailed narrative discourse. The VaD participants reproduced more propositions than the AD participants, but comparatively the same to the healthy groups. There were more conjunctions in stories reproduced by the VaD participants as compared to other groups, although this tendency was not present in tale reproductions. Individuals in the AD group had more difficulties in providing a tale moral than YE and OE individuals. Despite lower cognitive function in clinical groups as compared to healthy individuals, most people managed to recapture the propositions from the introduction, complicating action as well as the resolution of the story and fairy tale, i.e., to recreate the main content framework. Discourse recall correlated with performance on verbal memory, attention/working memory, and reasoning.

Conclusions: The results underline neuropsychological differences between the studied dementia types. The current findings encourage to use narrative reproduction as a method complementing the standard neuropsychological examination.

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Motor Reserve and current Physical Activity in aging: relations with Executive Functions

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Background and Objectives: Current research aims to find solutions to preserve older adults' cognitive functioning and to improve the quality of their life. Physical activity (PA) is widely recognized as a beneficial factor for late-life cognition (e.g. Bherer et al., 2013), mostly for executive functions (e.g. Liu-Ambrose et al., 2012). But recent findings (Reas et al, 2019; Pucci & Mondini, in press) showed that lifelong PA and exercise carried out over time have cumulative effects, providing a reserve (Motor Reserve, MR) which could protect from age-related impairment. In particular, we hypothesize that executive functions would benefit from a greater MR.

Method: We assessed remotely executive functions in 101 healthy subjects over 50 years (range 50-84), using the telephone (due to Covid-19 limitations). Then, we administered two questionnaires to assess current Physical Activity (performed in the last 12 months, cPA) and Motor reserve (performed across lifespan, MR). These considered not only physical exercise (structured, planned, purposive to improve physical fitness), but also incidental physical activity, which includes any kind of activity leading to a

metabolic expenditure above baseline (e.g., housekeeping, walking, care activities, etc). Linear regression models were used to analyze the relation between MR and cPA on the one hand, and executive functioning on the other hand.
Results: As to the MR, physical exercise (PE) resulted to be the type of physical activity with the strongest influence on executive functions, in particular considering a global executive index (β_{MRPE}=.379, R^2=.205, p < .001) and the only task of working memory (β_{MRPE}=.246, p=.014); inhibition was instead predicted by cPA (β_{cPA}=-.213, R^2=.129, p=.001); lastly, processing speed resulted to be related to both MR (β_{MR}=- .242, p=.015) and cPA (β_{cPA} =-.191, p=.019).
Conclusions: The amount of physical exercise carried out over the entire lifespan seems to be an important factor when considering executive function tasks among adults over 50 years old, suggesting that physical exercise could have a key role in the prevention of age-related decline of higher-order cognitive functions.
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Systematic review of Magnetic Resonance Imaging studies exploring hippocampal correlates of episodic memory in Parkinson's disease

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Background and Objectives: The present review aims to synthesize magnetic resonance imaging (MRI) studies on the relationship between hippocampal regions and episodic memory in Parkinson's disease (PD). A critical analysis of the evidence will ask whether MRI studies are able to define neural correlates of episodic memory in the hippocampus in PD and explore future avenues of research and clinical applications.
Method: Following PRISMA guidelines, systematic searches were performed in PubMed, Web of Science, Medline, CINAHL, and EMBASE using search terms related to MRI, hippocampus, episodic memory, and Parkinson's disease. Study quality was assessed for each study using the Newtown-Ottawa Scale.
Results: Eight functional MRI, seven diffusion MRI and 24 structural MRI (14 exploring whole hippocampus and 10 exploring hippocampal subfields) studies met the inclusion criteria, totalling 39 studies. The review concluded mixed evidence from functional and diffusion MRI, but stronger evidence from structural MRI of the hippocampus as a biomarker for episodic memory impairment in PD. Subfield studies most consistently implicated CA1, CA3/4 and subiculum volume in episodic memory impairment in PD.
Conclusions: Despite methodological differences, MRI studies have furthered our understanding of an important neural correlate of episodic memory impairment in PD with both clinical and theoretical implications. Current gaps in the literature encourage future research on hippocampal subfield structure and function as a potential biomarker of episodic memory dysfunction and future dementia in PD.
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Can a goal intervention improve language fluency in healthy and pathological ageing?

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Background and Objectives: Parkinson's disease [PD] is associated with reduced motor and cognitive initiation, and decreased goal-directed behavior, including language generation. The current study investigated language fluency and a novel Goal Intervention for language generation impairment in PD patients.
Methods: Twenty-one PD patients and 22 healthy controls matched for gender, age and education completed a neuropsychological baseline including tests of premorbid and fluid intelligence, verbal memory, language, executive function, attention, processing speed and self-report questionnaires of apathy and mood. The experimental tests comprised three language generation tasks (complex scene descriptions and phonemic/semantic word fluency) with standard and adapted instructions, which implemented a target 'goal'.
Results: PD patients performed more poorly than healthy controls on two of three language generation

tasks. The PD patient group reported higher levels of apathy and depression than healthy controls. In addition, PD patients scoring high on an *executive* apathy dimension were more likely to have impairments in language generation than PD patients without executive apathy. There were no significant effects for *initiation* or *emotion* apathy and language generation impairments. The Goal Intervention was effective in increasing both the PD patient and healthy control groups' language generation performance. However, there was no differential benefit of increased goal specificity and difficulty for PD patients and apathy subtype was unrelated to goal benefit.
Conclusions: The Goal Intervention was effective in increasing language generation for both PD patients and older adults, suggesting that enhanced goal specificity and difficulty may benefit individuals with PD or those aging naturally.
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Cognitive characteristics and frequency of Mild Cognitive Impairment in early-onset Parkinson's disease patients with short-, mid-, and long-term disease duration

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Background: Early-onset Parkinson's disease (EOPD) is a clinical variant of the disease with symptom onset <50 years. It was initially described that EOPD was characterized by minimal or lack of cognitive decline. Recent studies report a prevalence of Mild Cognitive Impairment (PD-MCI) of approximately 30%, similar to that of late-onset Parkinson´s patients, in whom a PD-MCI diagnosis represents risk for developing dementia (PD-D) in the medium-term.
Objectives: To determine if cognitive performance and frequency of PD-MCI/PD-D differ between EOPD patients with short- (1-8y), mid- (9-16y) and long-term (>16y) disease duration.
Method: 172 EOPD patients (47 short-, 89 mid- and 36 long-term disease duration) were included. Cognitive assessment included attention/working memory, memory, visuospatial function, language and executive function. International Parkinson and Movement Disorder Society PD-MCI and PD-D criteria were used. Standardized scores were used for all comparisons.
Results: All groups were homogeneous regarding education, motor symptoms, dopaminergic medication, premorbid intelligence, and depressive symptoms; but differed in age (M=48.8, M=52.7, M=60.8, p<.01) and age at disease onset (M=41.2, M=40.8, M=38.9, p<.01). No between-group differences were found in performance on any cognitive test or in the proportion of patients with PD-MCI (43%, 45%, 44%, p>.05). No patient presented PD-D.
Conclusions: The severity of cognitive dysfunction and the proportion on patients with PD-MCI does not increase with disease duration in EOPD; results suggest that in a subgroup of EOPD patients cognitive dysfunction appears in early disease stages and can remain stable. MCI in EOPD does not seem to represent the same risk for developing dementia as in other populations.
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Evaluating the Patient Impact of Delirium in Australian Acute Care

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Background and Objective: The increasing average age of patients in Australian hospitals is associated with greater levels of cognitive impairment in the inpatient population. A common reduction in cognition that is experienced by patients in the 65 years and over age group, even those with normal cognition, is post-operative delirium (POD). Current research suggests a likely relationship between post-operative delirium and long-term cognitive decline. The present research aims to determine the risk factors for development of POD and other confounding factors.

Little is published on the likely mutual relationship between diabetes and POD despite both POD and diabetes having adverse affects on brain function and cognition in older patients. One previous study demonstrated that in diabetic patients, delirium was associated with hypoglycaemia but not in non-diabetic patients. However further research is required.
Method: 35 patients aged 65 years and over who were undergoing elective or emergency orthopaedic surgery, were administered measures to identify their demographic variables and also to assess their cognitive, functional and emotional functioning prior and 2-weeks post-surgery. Baseline characteristics and results were compared between those who experienced POD and those who did not experience POD (normative group). Patients were excluded if delirium was detected prior to surgery at the baseline interview as measured by the Confusion Assessment Method (CAM).
Results: Overall, 20% of patients developed POD.

The POD group were older (M= 75 years) and had a lower level of education (M= 9 years) compared to the normative group (M=64 years of age and M=12 years of education).

57% of patients who experienced POD had diabetes compared to only 11% in the normative group.

Post-surgery, the POD group had higher levels of stress symptoms, reduced quality of life, increased executive dysfunction, and reduced verbal fluency when compared to the normative group. Overall, POD patient's post-surgery had reduced quality of life, lower mental control scores, increased cognitive decline and reduced executive functioning than they did prior to surgery.

Conclusions: The current study identified a number of likely bidirectional relationships between delirium and cognitive, functional and emotional decline and influencing factors. Potential implications of this will be discussed.

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Discrepancies between perceived driving abilities in elderly with cognitive impairments (ECI) and their caregivers – How cognition and functioning plays a part

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Background and Objectives: While driving attributes to independence and quality of life in the elderly, cognitive and functional changes can impair driving abilities resulting in poor traffic safety. Yet accurate assessment for driving competence in ECI is complicated and involve many factors including self-perception and caregiver's perception of driving abilities. Perception of ECI's driving abilities have been found to be discrepant between self and caregivers, with reasons unclear. We aim to examine factors that influence perception of ECI driving abilities from self and caregiver that could facilitate interventions to promote safe driving. We compared and contrasted ECI and caregiver's reports on perceived driving abilities in relationship to the patient's cognitive status, functional status as well as performance on the roads.

Method: 21 ECIs (clinically assessed CDR score of 0.5-1.0) who are currently driving and their caregivers completed a survey assessing perception of patients' current driving abilities, driving history, accident records and abilities in instrumental ADLs. All ECIs also underwent a cognitive screener (MMSE) to determine their general cognitive status.

Results: ECIs rated themselves as better able in their overall driving abilities (t=-3.88, p=.001), particularly having less concerns about their current driving abilities (t=-3.93, p=.001) and perceived less cognitive issues with regards to driving (t=-5.09, p<.001). Greater discrepancies in perceived overall driving abilities is associated with higher CDR scores (t=2.54, p= .021) and perceived iADL abilities (r= -.48, p=.03), and not factors relating to patient's general cognitive status, demographics, driving history or safety records.

Conclusions: ECIs self-perceived better driving abilities. These discrepancies are influenced by disease status and perceived daily functional abilities. These results and its implications will be discussed in the context of our local settings.

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Prospective memory training in older adults: A systematic review and meta-analysis

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Background and Objectives: Prospective memory (PM), the ability to remember to carry out delayed intentions, is one of the common cognitive declines in older adults. PM is a crucial ability to maintain everyday functioning, and previous studies showed that PM performance in older adults can be improved via training. The current study aimed to summarize the evidence by conducting a qualitative systematic analysis and a quantitative meta-analysis on the effect of PM training in older adults.

Method: Systematic searches were conducted across seven databases (Cochrane Library, Embase, PubMed, PsychInfo, Web of Science, CINAHL and Scopus).

Results: In the qualitative analysis, 48 studies were included. Forty three percent of the interventions were found to report positive training gains in PM training. However, the methodological quality varied across studies, with 41% of the non-randomized control trials (non-RCTs) were rated as having either serious or critical risk of bias. Therefore, in the subsequent quantitative meta-analysis, only 29 RCTs were included. Results demonstrated a significant, and moderate immediate efficacy (Hedges' g = 0.54) of PM training in enhancing PM performance in older adults, but the long-term efficacy (Hedges' g = 0.21) was not significant. Two subgroup analyses have also revealed the robust training efficacy across the study

population (i.e., healthy and clinical population) and the number of sessions in training (i.e., single session and program-based).
Conclusions: Overall, the present study provided positive evidence to support PM training in older adults. Future studies are suggested to explore the mechanisms in PM training as well as conducting more good quality RCTs.
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A multi-disciplinary approach for treatment and management of atypical Semantic Dementia – A case report

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Background and Objectives: Semantic dementia (SD) is a relatively rare form of Frontal-Temporal Dementia that typically comprises a gradual deterioration of word knowledge, followed by more general cognitive impairments and functional decline. Occasionally, it also features significant executive dysfunction as part of the early cognitive sequelae. There is no disease modifying intervention for SD, although speech and language therapy has been found benefit expressive language ability.
Method: We present the case of MM, a 54 year old lady with a history of cancer, cardiomyopathy, and family history of dementia, who presented initially with a 2-5 year history of language and behavioural changes (e.g. OCD-like traits). She underwent review by a multi-disciplinary team, and she received medical, speech therapy, cognitive and behavioural intervention over a 2-year period.
Results: Reliable change indices calculation found progressive decline in cognition and language abilities that were unlikely to be due to normal error measurement, with most cognitive abilities now estimated to be in the borderline- extremely low range, with normal visual-spatial and working memory functioning. Despite this deterioration, milder deterioration on language based tasks were found (specifically Vocabulary and Information subtests from the WAIS-IV), with MM maintaining a functional level of communication at her 2 year review. Education and behavioural intervention with the family was also noted to improve their level of carer stress.
Conclusions: Results suggest benefit of speech therapy intervention well into the progression of semantic dementia to delay the progressive loss of functional language and a supportive role of behavioural intervention.
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The analysis of genetic variability of MT-RNR2 and MT- RN2L5 genes encoding humanin in patients diagnosed with Parkinson's disease

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Background and Objectives: D: Humanin (HN) is an 24 amino-acids peptide, originally identified as a neuroprotective factor in Alzheimer's disease. It's antiapoptotic activity is mediated through interference with Bax activation and suppression of Bax-dependent
apoptosis. HN and its analogues may be considered as a therapeutic targets not only for Alzheimer`s disease but also for other neurodegenerative disorders. The mutational analysis of gene encoding HN showed that certain mutations result in a large, approximately 1000-fold increase in in vitro activity. The aim of this study was to assess the influence of genetic variability of genes encoding humanin on the course of Parkinson's disease
Method: We performed the sequence analysis of MT-RNR2 and MT-RNR2L5 genes encoding the HN by genotyping of peripheral blood-derived DNA samples collected from 214 patients diagnosed with Parkinson`s disease and 193 healthy controls
Results: We identified c.38C<T variant in MT- RNRL5 gene which, while did not influence Parkinson`s disease prevalence rate, was associated with more advanced clinical phenotype. We observed higher frequency of CT and CC genotypes in comparison to TT genotype in patients presenting more severe symptoms of the disease including presence of dementia (MMSE), high level of disability (HoehnYahr), affected activities of daily living (UPDRS II) as well as walking disturbances (UPDRS III). We identified the missense variant c.7C<T, (p.Pro3Ser) in MT-RNR2 gene in two patients diagnosed with Parkinson`s disease. In these two carriers of c.7C<T variant we observed less pronounced Parkinson`s disease progression. They did not present any serious cognitive or motor disabilities.
Conclusions: Based on our results we can speculate that gene heterogeneity may influence specific HN and its analog activities. Further studies regarding the exact pathological mechanism in which HN is involved are needed.
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