

2023 ASSBI 46<sup>TH</sup> ANNUAL CONFERENCE ABSTRACTS  
ASSBI/NZRA AWARDS

Kevin Walsh Award for Most Outstanding Masters Student 2012

# Suicidal Ideation, Self-Harm, and Internalising Psychopathology Following Traumatic Brain Injury

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**Background and Objectives:** Traumatic brain injury (TBI) has been associated with an increased risk for suicidality, yet there has been very limited research investigating this issue. Our aims were three-fold and involved exploring the following: 1) patterns and profile of suicidality and self-harm symptoms; 2) associations between demographic/injury-related factors and suicidality and self-harm symptoms; and 3) associations between transdiagnostic dimensions of internalising psychopathology and suicidality and self-harm.

**Method:** This observational cross-sectional study involved 408 participants with predominantly severe TBI who were on average 10 years post-injury. Participants completed the Expanded Version of the Inventory of Depression and Anxiety Symptoms. Frequency statistics, descriptives, visualisations, non-parametric tests for univariate associations, and multiple linear regression analysis was used to analyse the ability of demographic, injury-related and psychopathological variables to predict suicidality.

**Results:** In the previous two weeks, 21% of the sample reported thinking about suicide (most often ‘a little bit’) and 5% reported hurting themselves purposefully (most often ‘a little bit’). Higher suicidality was associated with fewer years post-injury, unemployment, not being in a relationship, and currently receiving mental health treatment. Further, suicidality was significantly positively correlated with 16 internalising symptom dimensions, but not with euphoria. On the other hand, suicidality was not significantly associated with age, sex, years of education, TBI severity or TBI cause. The combination of demographic, injury-related and psychopathological variables explained 45% of the variance in suicidality, with four uniquely significant predictors: *traumatic intrusions*, *ill-temper*, *panic*, and *low wellbeing*.

**Conclusions:** Although a fifth of the sample endorsed suicidal ideation, this was mostly at mild levels. Self-harm was even less prevalent. We identified a profile of demographic, injury-related, and demographic factors that were associated with these issues. Taken together with a transdiagnostic perspective of psychopathology, we found that, traumatic intrusions, ill-temper, panic, and low wellbeing may also be particularly important to understanding suicidality in this population.

**LURIA Award for Most Outstanding Doctoral Student 2023****Hemispheric contributions toward interoception and emotion: Comparisons of left- and right-predominant anterior temporal lobe degeneration**

Jessica L. Hazelton<sup>1,2</sup>, Emma Devenney<sup>2,3</sup>, Rebekah Ahmed<sup>2,4</sup>, James Burrell<sup>2,5</sup>, Yun Hwang<sup>2</sup>, Olivier Piguet<sup>1,2</sup> and Fiona Kumfor<sup>1,2</sup>

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**Background & Objectives:** The hemispheric contributions toward interoception, the perception of internal bodily cues, and emotion recognition remains unclear. Semantic dementia cases with either left-dominant (i.e., left-SD) or right-dominant (i.e., right-SD) anterior temporal lobe atrophy experience emotion recognition difficulties, however, little is known about interoception in these syndromes. Here, we hypothesised that right-SD would show worse interoception and emotion recognition due to right-dominant atrophy.

**Methods:** Thirty-five participants (8 left-SD; 6 right-SD; 21 controls) completed a monitoring task. Participants pressed a button when they: (1) felt their heartbeat, without pulse measurement (Interoception); or (2) heard a recorded heartbeat (Exteroception-control). Simultaneous ECG was recorded. Accuracy was calculated by comparing the event frequency (i.e., heartbeat or sound) to response frequency. Emotion recognition was assessed via the Facial Affect Selection Task. Voxel-based morphometry analyses identified neural correlates of interoception and emotion recognition.

**Results:** Right-SD showed worse interoception than controls and left-SD (both  $p$ 's < .001). Both patient groups showed worse emotion recognition than controls (right-SD:  $p$  < .001; left-SD:  $p$  = .018), and right-SD showed worse emotion recognition than left-SD ( $p$  = .003). Regression analyses revealed that worse emotion recognition was predicted by right-SD ( $p$  = .002), left-SD ( $p$  = .005), and impaired interoception ( $p$  = .004). Interoception and emotion were associated with the integrity of right-lateralised structures including the insula, temporal pole, thalamus, superior temporal gyrus, and hippocampus.

**Conclusion:** Our study provides the first evidence for impaired interoception in right-SD, suggesting that impaired emotion recognition in this syndrome is driven by inaccurate internal monitoring. Further we identified a common neurobiological basis for interoception and emotion in the right hemisphere.

**TRAVEL AWARD FOR STUDENTS 2023****Volumetric trajectories of amygdala subnuclei in frontotemporal dementia**

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**Background and Objectives:** Amygdala atrophy has been implicated in frontotemporal dementia (FTD), a group of heterogeneous neurodegenerative disorders, yet the degree to which it is affected in each clinical phenotype remains inconclusive. Given that amygdala is critically involved in socio-emotional processes,

comprehension of its abnormalities is essential for understanding the behavioural changes commonly observed in FTD. The aim of this study was to determine the volumetric alterations of the amygdala subnuclei in FTD subtypes as disease progresses.

**Method:** Patients clinically diagnosed with behavioural variant FTD (bvFTD) (n = 20), semantic dementia (SD) (n = 20), primary non-fluent aphasia (PNFA) (n = 20), Alzheimer's disease (AD) (n = 20), and 20 matched healthy controls (HC) completed whole brain structural MRI annually across multiple time points. FreeSurfer segmentation pipeline was used to extract amygdala nuclei volumes. Linear mixed effects models were applied to identify changes in amygdala volumes over time.

**Results:** At baseline, bvFTD and SD displayed global amygdala volume reduction compared with HC ( $p < 0.05$ ). Atrophy was most severe and asymmetrical (Left > Right) in SD ( $p < 0.001$ ). Longitudinally, all FTD subtypes showed faster amygdala atrophy rates than HC ( $p < 0.05$ ). SD and PNFA showed the most prominent decline in the basolateral subnuclei.

**Conclusions:** This is the first study to characterise longitudinal changes of amygdala subnuclei in FTD. The findings provide evidence that amygdala is affected in all FTD subtypes, showing distinct atrophy profiles across the disease course at subnuclei levels. Further research is warranted to clarify the associations between amygdala subnuclei abnormalities and behavioural changes in FTD.

### Douglas Tate Best 2022 Brain Impairment Publication Award

## Susan Barker-Collo, Brain Impairment (2021), Volume 22, Special Issue 1

S. Barker-Collo, A. Theadom, K. Jones, N. Starkey, K. Fernando, M. Kahan, P. Prah and V.L. Feigin

Three methods for examining trajectories in neuropsychological performance across the first 4 years after mild Traumatic Brain Injury.

### ABSTRACTS THURSDAY 4<sup>TH</sup> MAY

## Workshop - Learning 'propa ways' to engage – ideas on how to achieve successful outcomes when working with Aboriginal and Torres Strait communities

Sarah Russell<sup>1,2,3</sup>

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**Synopsis:** Knowing how to engage and work with First Nations communities appropriately may seem daunting for clinicians and researchers who may lack experience. For clinicians, the lack of appropriate tools or a framework for interpreting results that incorporates a First Nations worldview can be a challenge. In the research space, it is important to know how to effectively engage and conduct research with communities to ensure positive outcomes. Despite research guidelines existing to ensure the needs of First Nations communities are met ethically and effectively, non-Indigenous researchers may not be fully aware of the complexities involved in working within these guidelines.

This workshop will be delivered by First Nations and Non-Indigenous members of the Healthy Ageing Research Team (HART). HART is an interprofessional group of clinician-based researchers based at James Cook University. In this workshop, HART will share their learnings and knowledge gained while working in both a clinical and research space with First Nations communities. The workshop aims to be interactive and provide opportunities for discussions and practical applications of topics being discussed.

**Learning Objectives/Outcomes:**

1. Knowledge of ways to engage meaningfully when working in a clinical space with First Nations peoples.
2. Knowledge of available tools and assessment processes and how to assess and interpret results within a holistic framework that takes Australian First Nations world views into consideration.
3. Knowledge of decolonising methodologies including ways to conduct clinically meaningful community engagement as well as appropriate research methods incorporating First Nations research paradigms.

## Workshop - The Development and Efficacy of Technological Interventions of Cognitive Impairments in Individuals with Traumatic Brain Injury

David Shum

Faculty of Health and Social Sciences, The Hong Kong Polytechnic University, Hong Kong

**Synopsis:** Brain injury is a significant problem that can arise from external or internal causes. Regardless of the reason for the injury, impairments in neurocognitive processes (e.g., attention, memory, executive function, language, social cognition) are common sequelae after the injury. Importantly, these impairments have been found to affect daily functioning and vocational outcomes.

In the literature, health professionals had developed techniques and procedures to rehabilitate these impairments. While most of these interventions involve face-to-face training using behavioral or paper and pencil tasks, recent developments have adopted the latest technology (e.g., computerized training, virtual reality, robotics) for individuals with brain injury.

The aim of this workshop is to review the development of technological interventions for motor and cognitive impairments in individuals with brain injury. Specifically, the following topics will be covered:

- Recent development of the application of technology in brain injury rehabilitation
- Research and evaluation of the efficacy of these latest interventions for individuals with brain injury
- Significant issues in this area and suggestions for future development

**Learning Objectives/Outcomes:**

1. The latest technological procedures that have been applied to treat/rehabilitate impairments after a brain injury
2. The rationale, advantages, and limitations of these procedures
3. The objective evidence regarding the efficacy of these interventions

## Workshop - Reducing Alexithymia and Emotion Dysregulation after Brain Injury through Training Emotional Awareness: What We've Learned and How to Do It

Dawn Neumann<sup>1,2</sup>

<sup>1</sup>Indiana University School of Medicine, Physical Medicine and Rehabilitation Department and <sup>2</sup>Rehabilitation Hospital of Indiana (RHI)

**Synopsis:** Alexithymia is an emotional processing deficit that interferes with one's awareness of their own emotions and their ability to label, differentiate (distinguish anger from fear), and express them. Alexithymia is highly prevalent in persons with traumatic brain injury (TBI). Emotional awareness is fundamental to one's ability to properly process and effectively regulate their emotions. Consequently, those with deficits in emotional awareness (i.e., alexithymia) lack the foundation needed for emotion regulation. Studies in moderate to severe TBI have associated alexithymia with a variety of emotion dysregulation problems and symptoms of affective disorders. Given the detrimental impact of alexithymia, we have created an eight-session intervention, Training to Reconnect with Emotional Awareness Therapy (TREAT), to address this problem in the TBI population, with the hopes of having downstream benefits for better psychological health outcomes.

**This workshop will:**

1. Offer an overview of the evidence established to-date from two clinical trials of the TREAT intervention in participants with moderate to severe TBI, including outcomes on emotion dysregulation, anxiety, depression, and anger;
2. Describe clinical characteristics of alexithymia and commonly used assessments for evaluating alexithymia;
3. Provide an in-depth review of all the session-by-session components of the TREAT intervention (i.e., content, exercises); and
4. Conclude with an interactive discussion regarding thoughts and strategies for clinical implementation of this therapy.

**Learning Objectives/outcomes:**

- Knowledge regarding current evidence for an alexithymia intervention in the TBI population
- Key clinical features of alexithymia
- Knowledge about available tools to assess alexithymia after brain injury
- Methods for treating alexithymia and improving emotional awareness in patients with brain injury.

## Workshop - Let's talk ADHD: symptoms, assessment & how to help?

Emma Sciberras

Deakin University, Melbourne, Australia

**Synopsis:** This workshop will cover the signs and symptoms of Attention-Deficit/Hyperactivity Disorder (ADHD), best practice assessment of ADHD and non-pharmacological strategies to support individuals with ADHD. First, we will cover what are the signs and symptoms of ADHD and other conditions that commonly co-occur with ADHD. We will then move onto how to assess for ADHD in accordance with

best practice clinical guidelines. We will then cover the evidence for a range of non-pharmacological supports for ADHD and practical strategies that can be used in clinical practice. The workshop will largely focus on children and adolescents but will also include some key considerations about ADHD in adults.

**Learning outcomes:**

- Describe best practice assessment of ADHD.
- Understand the efficacy of non-pharmacological interventions for ADHD, delivered at both home and at school.
- Draw on practical strategies that can be used to support children with ADHD at home and at school.

**ABSTRACTS – FRIDAY 5<sup>TH</sup> MAY**

## **Plenary: Understanding Neurocognitive Processes: My Recent Neuropsychological Research in Australia and Hong Kong**

David Shum

Faculty of Health and Social Sciences, The Hong Kong Polytechnic University, Hong Kong

**Synopsis:** In this presentation, I will describe some of the research projects I conducted with my colleagues and PhD students recently in Australia and Hong Kong and present their results and findings. While most of these projects aimed to understand neurocognitive processes (particularly those mediated by the prefrontal areas), the constructs studied, and the methodologies used varied between them. Most of the research conducted was in the area of prospective memory (PM) and included a systematic review and meta-analysis of PM training in older adults, studies that aimed to improve PM performance, and a study that used functional near-infrared spectroscopy (fNIRS) to understand the neural basis of PM. Another line of research was in the area of executive function (EF) and included a study that aimed to examine individual differences in EF performance in late adolescence and early adulthood and its relationship with risk-taking behaviour. Mental health research is the final area of my research projects, and it included a systematic review of studies that used fNIRS to measure neural activations during emotional processing in healthy adults.

## **Concurrent Sessions: “Having moved and being able to be quite independent.” Outcomes over two years for people with neurological disability and complex needs after moving into new individualised apartments.**

Jacinta Douglas<sup>1,2</sup>, Di Winkler<sup>1,2</sup>, Stacey Oliver<sup>1,2</sup>, Stephanie Liddicoat<sup>1,2</sup> and Kate D’Cruz<sup>1,2</sup>

<sup>1</sup>Summer Foundation, Melbourne, Australia and <sup>2</sup>Living with Disability Research Centre, School of Allied Health, Human Services & Sport, La Trobe University, Melbourne, Australia

**Background and Objectives:** The National Disability Insurance Scheme (NDIS) provides Specialist Disability Accommodation (SDA) payments to people with disability and complex needs who need individualised housing. An estimated 6% of NDIS participants are eligible for SDA. While limited available evidence suggests that meeting an individual’s housing needs and preferences is foundational to positive outcomes in major life areas, only 3 studies have investigated resident outcomes over time. In this study,

we compared pre-move outcomes with outcomes at 1 year and 2 years post-move for people with disability who moved into SDA apartments. We hypothesised that significant improvements would be shown on health, wellbeing and community integration outcomes at 1 and 2 years after moving into individualised SDA, when compared to pre-move measures.

**Method:** This study is part of a large longitudinal, mixed-methods project designed to evaluate individual experiences and outcomes of moving to individualised housing for people with disability. We report the individual outcomes of the first 7 participants (3 males, 4 females, M age 42.3 years) who completed pre-move, 1- and 2-yr post-move evaluation. Participants had a range of disability types (2 acquired brain injury, 2 neurological other, 2 cerebral palsy, 1 multiple sclerosis) and pre-move living environments (1 aged care, 4 group home, 2 home with parents). They had all moved into SDA apartments and completed data collection at pre-move ( $n = 7$ ), 1 year ( $n = 6$ ) and 2 years ( $n = 7$ ) post-move. Health (EuroQol-visual analog scale), wellbeing (Warwick-Edinburgh Mental Wellbeing Scale) and community integration (Community Integration Questionnaire-Rev) were compared across timepoints. Reliable change index (RCI) was used to evaluate the significance of individual score changes over time.

**Results:** At 1-yr reliable improvement was demonstrated on health ratings by 3/6, wellbeing by 2/6 and community integration by 3/6 participants. At 2-yr reliable improvement was demonstrated on health by 4/6, wellbeing by 2/6 and community integration by 2/6 participants. Participants experiences mirrored RCI results: “moving has absolutely been a good thing. It’s helped me be more myself, more like the person I want to be and less drawn into the issues of unhappiness.”

**Conclusions:** These findings support the premise that individualised housing can make a significant contribution to improved health, wellbeing, and independence for people with disability.

## Barriers to Hospital Discharge for People with Neurological Disability and Complex Needs: A Survey of Health Professionals

Ella-Rose Minter<sup>1,2</sup>, Lee Cubis<sup>1,2</sup>, Di Winkler<sup>1,2</sup> and Jacinta Douglas<sup>1,2</sup>

<sup>1</sup>Summer Foundation Ltd, Melbourne, VIC, Australia and <sup>2</sup>Living with Disability Research Centre, La Trobe University, Melbourne, VIC, Australia

**Background and Objectives:** People with acquired neurological disability are at risk of discharge delays that put pressure on hospital flow and are detrimental to those stuck in hospital. The National Disability Insurance Scheme (NDIS) in Australia provides novel housing and support options that enable people to return home; however, timely navigation of the health and NDIS interface is crucial for effective hospital discharge. The aim of this study was to explore the main barriers to effective discharge from the perspective of health professionals working with hospital patients with disability and complex needs.

**Method:** 89 hospital-based health professionals working with people with disability and complex needs completed an online survey exploring the challenges of accessing housing and supports for NDIS participants. Qualitative responses were extracted, coded and integrated to form overarching themes using inductive thematic analysis methods.

**Results:** 40% of respondents reported barriers relating to accessing housing and supports. This included difficulty finding housing that met an individual’s accessibility needs in their preferred location meaning that the only available housing options were often group homes. 37% of respondents reported NDIS processes as a key barrier to effective discharge. This included extended and unpredictable waiting times for housing and support decisions, and difficult and unclear processes for providing the required evidence for these decisions. 18% of respondents identified stakeholder involvement as a key challenge. This included poor collaboration between NDIS and hospitals, and difficulty communicating with community disability support providers to provide an effective coordinated transition from hospital to home.

**Conclusions:** Addressing the issue of people with neurological disability being stuck in hospital will require improved access to housing in metropolitan and regional areas, prompt and transparent decisions about housing and support funding decisions and enhanced communication pathways between hospitals, the NDIS and disability support providers.

## A scoping review of methods used to evaluate home and living options with people with disabilities

Libby Callaway<sup>1,2</sup>, Grace Bitner<sup>3</sup> and Em Bould<sup>2</sup>

<sup>1</sup>Rehabilitation, Ageing and Independent Living (RAIL) Research Centre, School of Primary and Allied Health Care, Monash University, Frankston, Australia, <sup>2</sup>Occupational Therapy Department, School of Primary and Allied Health Care, Monash University, Frankston, Australia and <sup>3</sup>The Hopkins Centre, Griffith University, Brisbane, Australia

**Background and Objectives:** Acquired brain injury (ABI) frequently impacts cognition and/or communication. These changes necessitate close consideration of methods to maximise inclusion of the perspectives of people with ABI in research. Growing options for coordinated housing and support for people who experience ABI is an ongoing area for government investment internationally. To date, however, research in this area has most often used traditional methods, like surveys, interviews and observational designs, to evaluate housing outcomes. Such methods risk excluding perspectives of some people with ABI. This study aimed to identify research methods used to evaluate home and living options with people with disabilities, including people with ABI, and identify those which are participatory.

**Method:** A scoping review was undertaken searching five databases between 2010-2021, using Arksey and O'Malley and Levac and colleagues' five methodological steps. Search terms were established via use of keywords and Medical Subject Headings, coupled with input of lived experience co-researchers regarding terms they use themselves.

**Results:** With duplicates removed, 11,660 articles were identified. Abstracts were then screened independently by two reviewers, and 103 studies met inclusion for full text review. Twenty-two research methods were identified. Interviews, surveys, published assessments and focus groups were most commonly used, often administered via proxies. Some participatory methods were identified (e.g., PhotoVoice; Story House), but reported infrequently.

**Conclusion:** A majority of housing evaluations published have been completed using methods that may not accommodate perspectives of people of all abilities. Inclusive research designs are necessary, requiring additional resources to ensure authentic contributions.

## Achieving the Younger People in Residential Aged Care Targets

Di Winkler<sup>1,2</sup> and Jacinta Douglas<sup>1,2</sup>

<sup>1</sup>Summer Foundation, Melbourne, Australia and <sup>2</sup>School of Allied Health, La Trobe University, Melbourne, Australia

**Background and Objectives:** Aged care is no place for younger people. Research shows that their lives are characterised by boredom, loneliness and frustration. In late 2019 the federal government set clear measurable targets and timeframes that aimed to solve the issue of younger people in aged care (YPIRAC) once and for all i.e., no-one under 65 years of age to be living in residential aged care (RAC) by 2025. To date the YPIRAC initiative has included a range of policy and process changes and interventions with varying degrees of impact on the outcomes of people with disability. For example, changes to the aged care



assessment process have made it much harder for hospitals to discharge younger people to RAC. Rather than younger people going to more appropriate NDIS funded housing options, more NDIS participants have experienced long stays in hospital. More analysis is needed to better understand the systems change required to achieve the 2025 YPIRAC targets.

**Method:** This study analysed AIHW and NDIA administrative and outcome data for people under 65 who lived in permanent RAC between 2017-2022. This quantitative study analysed trends and the flow of young people into and out of aged care to examine the impact of the YPIRAC initiative to date. We also examined the changes in the discharge destination and outcomes of younger people who left RAC during this period. The timing and implementation of specific government initiatives and policy changes were mapped over time to determine if there was any correlation with trends or outcomes of YPIRAC or young people at risk of RAC.

**Results:** The number of YPIRAC is falling, but in most cases, it is not for the right reasons. The drop is mainly attributed to younger people dying in RAC or 'ageing out' when they turn 65. Over 3,000 younger people remain in aged care and a further 35 are admitted to RAC each month. Recent data shows that while there are over 650 YPIRAC with a goal to move, in the past year only 39 YPIRAC left RAC to live in NDIS funded housing.

**Conclusions:** Unfortunately, the federal government has failed to make significant positive progress on changing the systems that force young people to enter RAC and leave them there. Government failed to achieve the 2022 YPIRAC targets. This detailed analysis of aged care and NDIS data and specific federal government initiatives to date provides a clear evidence base for further interventions needed in order to achieve the 2025 YPIRAC targets.

## “Making a comeback”: The experiences of people following severe ABI as they adapt to life in the community and engage in activities of interest

Suzanne Currie<sup>1,2,3</sup>, Jacinta Douglas<sup>1,2</sup> and Di Winkler<sup>1,2</sup>

<sup>1</sup>La Trobe University, Melbourne, VIC, Australia, <sup>2</sup>Summer Foundation, Melbourne, VIC, Australia and <sup>3</sup>Alfred Health, Melbourne, VIC, Australia

**Background and Objectives:** Community integration and maintenance of social connections has been recognised as a complex and multifaceted issue for people following severe acquired brain injury (ABI). ABI is one of the most common causes of disability in adults, often having a significant impact on a person's physical, communication, cognitive and psychosocial functioning. ABI frequently results in people requiring assistance for many aspects of their daily life, including accessing the community to participate in activities of their choosing. Even with access to the support people require, community and social integration remains challenging during the transition home following inpatient rehabilitation. As people navigate the consequences of their ABI, it is vital to explore these challenges. Although often necessary, lengthy inpatient rehabilitation follows, resulting in distancing from people's loved ones and their community. Given the challenges people face, it is important to reflect on the role this distancing plays. In this study we aimed to gather the lived experience of individuals with severe ABI to understand their inpatient experience and transition to community living, with a focus on improving community integration outcomes.

**Methods:** Using grounded theory methodology, 13 adults with severe ABI (6 males, 7 Females, mean age 36) and 8 close others participated in in-depth interviews. Participants with ABI were on average 3.5 years post discharge from rehabilitation, with mean rehabilitation length of stay of 9 months. Data analysis followed an iterative process of coding to develop themes and subthemes and explore relations between them.

**Results:** Preliminary analysis of the lived experience has revealed several practice relevant insights regarding the experience of transition from inpatient rehabilitation to community living. Emergent themes are consistent with missed opportunities to engage in the community and connect with friends and family across the continuum. Much of the responsibility in leading community participation fell to family members and engagement in community-focused activity played a crucial role in shaping community participation outcomes. Lack of focus on re-engaging in life acts as a barrier to community integration. **Conclusion:** This study provides invaluable information to inform current practice to maximise community integration, across the continuum, and gain positive transition to community living following severe ABI.

## A qualitative study of the lived experience of grocery shopping and rehabilitation after moderate or severe brain injury

Laura DeLacy<sup>1,2</sup>, Jenny Fleming<sup>3</sup>, Danielle Sansonetti<sup>1,2</sup> and Natasha A Lannin<sup>1,2,4</sup>

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**Background and Objectives:** Challenges with community integration and resuming the complex activity of grocery shopping is common following a moderate or severe traumatic brain injury (TBI). There are large knowledge gaps concerning rehabilitation for improving participation in grocery shopping and the perceptions of those living with TBI. The aim of this study was to understand what brain injury-related impairments impact participation in grocery shopping from the perspective of people with TBI, and their experience of rehabilitation.

**Method:** An exploratory and descriptive qualitative approach with maximum variation purposive sampling used to recruit 14 adults with moderate to severe TBI from a specialised brain injury rehabilitation service. Participants were from inpatient and community settings. Semi-structured interviews ranging from 20-60 minutes were conducted. Data was analysed using a thematic approach, with deductive coding to the American Occupational Therapy Practice Framework. Double coding of >10% of interviews was completed to increase rigor.

**Results:** Six key themes emerged from the data: getting to the shops, generation and use of a list, searching and locating items, selecting items, budgeting and paying for items, experience of rehabilitation. New cognitive and visual impairments were identified to be the most common factors impacting on grocery shopping performance. Participants described the steps in the task of grocery shopping that were most impacted by their cognitive and visual impairments, along with strategies used to support participation. Participant perspectives on use of external aids and support from others to achieve participation in grocery shopping will be further discussed.

**Conclusions:** Cognitive and visual brain injury-related impairments can impact grocery shopping performance following TBI. Clinical rehabilitation should consider a person's cognitive abilities, preferences for strategies, available supports, and the environmental context when developing targeted rehabilitation interventions to promote participation in grocery shopping for this population.

## Social cognition in Multiple Sclerosis (MS): What evidence is there for change over time?

Cynthia Honan<sup>1</sup>, Anna Tompson-Mennitz<sup>1</sup>, Terry Purton<sup>1</sup>, Kiran Ahuja<sup>2</sup> and Edwin Lim<sup>3</sup>

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**Background and Objectives:** Social-cognitive difficulties in MS are common and can have devastating psychosocial impacts. This pilot longitudinal study examined the potential role of inflammatory cytokines and nicotinamide adenine dinucleotide (NAD<sup>+</sup>), a critical coenzyme important for intracellular metabolism, as potential biomarkers of social-cognitive abilities in people with MS (pwMS).

**Method:** Seventeen pwMS (13 female, 18-62 years) were assessed in the social-cognitive domains of emotion recognition and sarcasm detection tapping into Theory of Mind, using The Awareness of Social Inference Test-Short (TASIT-S) at baseline and after 5-to-6 years. Participants provided blood samples, from which NAD<sup>+</sup> (baseline only) and absolute concentration (AC) and florescent intensity (FI) cytokine (baseline and follow-up) extraction was undertaken.

**Results:** While change was not detected over time in TASIT-S scores or in the level of cytokines, higher levels of anti-inflammatory cytokine IL-4 was related to better sarcasm detection. Unexpectedly, lower pro-inflammatory cytokines were also related to better TASIT-S scores. These relationships also strengthened over time. When modelling both baseline NAD<sup>+</sup> and cytokines in the same regression, between 43% (FI) and 53% (AC) of the variance in emotion recognition scores and between 71% (FI) and 76% (AC) of the variance in follow-up sarcasm detection scores could be explained.

**Conclusions:** Select cytokines and NAD<sup>+</sup> may be predictive of long-term social-cognitive abilities and may provide evidence of change that is not yet detectable on objective neuropsychological testing. These pilot results suggest a larger, fully powered study to further examine these relationships is needed. The identification of predictive biomarkers could both facilitate timely assessment and intervention for social-cognitive difficulties, and the development of potential pharmacotherapeutic targets, which would improve health-related quality of life in pwMS.

## Hemispheric contributions toward interoception and emotion: Comparisons of left- and right-predominant anterior temporal lobe degeneration

Jessica L. Hazelton<sup>1,2</sup>, Emma Devenney<sup>2,3</sup>, Rebekah Ahmed<sup>2,4</sup>, James Burrell<sup>2,5</sup>, Yun Hwang<sup>2</sup>, Olivier Piguet<sup>1,2</sup> and Fiona Kumfor<sup>1,2</sup>

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**Background & Objectives:** The hemispheric contributions toward interoception, the perception of internal bodily cues, and emotion recognition remains unclear. Semantic dementia cases with either left-dominant (i.e., left-SD) or right-dominant (i.e., right-SD) anterior temporal lobe atrophy experience emotion recognition

difficulties, however, little is known about interoception in these syndromes. Here, we hypothesised that right-SD would show worse interoception and emotion recognition due to right-dominant atrophy.

**Methods:** Thirty-five participants (8 left-SD; 6 right-SD; 21 controls) completed a monitoring task. Participants pressed a button when they: (1) felt their heartbeat, without pulse measurement (Interoception); or (2) heard a recorded heartbeat (Exteroception-control). Simultaneous ECG was recorded. Accuracy was calculated by comparing the event frequency (i.e., heartbeat or sound) to response frequency. Emotion recognition was assessed via the Facial Affect Selection Task. Voxel-based morphometry analyses identified neural correlates of interoception and emotion recognition.

**Results:** Right-SD showed worse interoception than controls and left-SD (both  $p$ 's < .001). Both patient groups showed worse emotion recognition than controls (right-SD:  $p$  < .001; left-SD:  $p$  = .018), and right-SD showed worse emotion recognition than left-SD ( $p$  = .003). Regression analyses revealed that worse emotion recognition was predicted by right-SD ( $p$  = .002), left-SD ( $p$  = .005), and impaired interoception ( $p$  = .004). Interoception and emotion were associated with the integrity of right-lateralised structures including the insula, temporal pole, thalamus, superior temporal gyrus, and hippocampus.

**Conclusion:** Our study provides the first evidence for impaired interoception in right-SD, suggesting that impaired emotion recognition in this syndrome is driven by inaccurate internal monitoring. Further we identified a common neurobiological basis for interoception and emotion in the right hemisphere.

## ‘Would you take a drug for this?’ A qualitative study on social functioning in people with TBI and their attitude towards novel targeted treatments

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**Background and Objectives:** Many survivors of traumatic brain injury (TBI) sustain long-term problems with social functioning, including changes in social skills and social communication which can negatively impact their relationships, work and schooling, and general quality of life. Ongoing laboratory studies aim to develop new treatments and therapies to reduce the impact of social behaviour problems after a TBI. Yet the future translation of this work requires an understanding of the openness and willingness of people with TBI to take a new medication or undergo a new therapy. Therefore, this study aimed to explore the perceived level of social functioning of people with TBI, and their attitude towards potential novel treatments that may support social functioning.

**Method:** An exploratory qualitative study was undertaken in Victoria, Australia. Semi-structured interviews were conducted with 15 people (11 male and 4 female) aged 16-65 years, who had sustained a TBI at least 2 years prior. Data were thematically analysed using a framework approach.

**Results:** Three key themes were identified: 1) Narrowing social networks, 2) Distinct pre- and post-TBI social experiences, and 3) Openness to medication for improved social functioning. Participants described narrowing social networks as they lost contact with co-workers and either lost or intentionally disconnected from friends. Many described avoiding social situations to protect themselves from fatigue, anxiety, and unsupportive people. Many participants compared their pre- and post-TBI social experiences to highlight the negative impacts of their numerous “losses” (such as their driving licence, jobs, partners), confidence, and clear thinking on their social participation. Post-TBI, most participants described mainly socialising with family and/or carers, and many grappled with the loss of their former social identity. Most participants sought improved social functioning, thus hypothetical treatments such as medication was

deemed largely acceptable, and many stated they were “willing to give it a go” for “any potential” benefit; however, many were cautious about possible drug interactions with their existing medications.

**Conclusions:** Many people with TBI desire improved social functioning and were open to novel treatments, including potential medication treatments that could support improved social functioning.

## Volumetric trajectories of amygdala subnuclei in frontotemporal dementia

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**Background and Objectives:** Amygdala atrophy has been implicated in frontotemporal dementia (FTD), a group of heterogenous neurodegenerative disorders, yet the degree to which it is affected in each clinical phenotype remains inconclusive. Given that amygdala is critically involved in socio-emotional processes, comprehension of its abnormalities is essential for understanding the behavioural changes commonly observed in FTD. The aim of this study was to determine the volumetric alterations of the amygdala subnuclei in FTD subtypes as disease progresses.

**Method:** Patients clinically diagnosed with behavioural variant FTD (bvFTD) (n = 20), semantic dementia (SD) (n = 20), primary non-fluent aphasia (PNFA) (n = 20), Alzheimer’s disease (AD) (n = 20), and 20 matched healthy controls (HC) completed whole brain structural MRI annually across multiple time points. FreeSurfer segmentation pipeline was used to extract amygdala nuclei volumes. Linear mixed effects models were applied to identify changes in amygdala volumes over time.

**Results:** At baseline, bvFTD and SD displayed global amygdala volume reduction compared with HC (p < 0.05). Atrophy was most severe and asymmetrical (Left > Right) in SD (p < 0.001). Longitudinally, all FTD subtypes showed faster amygdala atrophy rates than HC (p < 0.05). SD and PNFA showed the most prominent decline in the basolateral subnuclei.

**Conclusions:** This is the first study to characterise longitudinal changes of amygdala subnuclei in FTD. The findings provide evidence that amygdala is affected in all FTD subtypes, showing distinct atrophy profiles across the disease course at subnuclei levels. Further research is warranted to clarify the associations between amygdala subnuclei abnormalities and behavioural changes in FTD.

## State Head Injury Unit: Client engagement towards better outcomes post-concussion

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**Background and Objectives:** Persistent symptoms following a concussion are increasingly associated with significant economic and social burden. Existing literature supports the efficacy of early education and self-management advice in reducing symptom duration. The objective of this study was to develop an appropriate early education program appropriate for SHIU clients.

**Method:** To guide the content and delivery of an appropriate education program, SHIU clients who have sustained a concussion were asked to engage in consumer focus groups and individual feedback.

**Results:** 39 clients who had sustained a concussion engaged in focus groups and/or provided individual feedback. Key themes identified included a desire for education pertaining to 1) the range of post-concussion symptoms; 2) practical tips and management strategies; 3) the multifactorial impact of trauma; 4) appropriate services; and 5) linking with others in similar circumstances. Another key theme identified was the need for this education to be provided early and consistently across clinicians/services.

**Conclusions:** As a result of this consumer guidance, the SHIU developed educational resources that include both 1) education around concussion, its mechanisms, and symptoms, as well as 2) practical management strategies that guide return to activity and desensitisation. This education was provided in a mild head injury handout (developed alongside Sir Charles Gairdner Hospital Emergency Department), as well as through the North Metro Concussion website. Further, to ensure early and consistent care, education around concussion and its management was provided to local and regional emergency departments, General Practitioners, and insurers. Moreover, within the service concussion referrals will be reviewed by phone within 2 weeks. Consumer satisfaction and key functional outcomes will be continually monitored with pre-liminary monitoring promising.

## Fatigue Trajectories and Predictors Following Pediatric Concussion

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**Background and Objectives:** Using a biopsychosocial framework and the three-factor fatigue model, we aimed to i) plot recovery of fatigue over the 3 months post-concussion, and ii) explore predictors of persisting fatigue during the first 3 months post-concussion.

**Method:** 240 children and adolescents aged between 5 to 18 years ( $M = 11.64$ ,  $SD = 3.16$ ) were recruited from the emergency department at a tertiary pediatric hospital. Participants completed assessments from time of injury to 3 months post-injury. Separate linear mixed effects models were conducted for child and parent ratings on the PedsQL-Multidimensional Fatigue Scale to plot recovery trajectories across domains (General, Cognitive, Sleep/Rest, and Total) from 1 week to 3 months post-injury. Correlational and two-block hierarchical regression analyses were then conducted for parent and child ratings of fatigue at each timepoint, with age, sex, and acute symptoms in block 1 and child and parent mental health variables added to block 2.

**Results:** There was a significant reduction in fatigue across all fatigue domains for both child and parent ratings (all  $p$ -values  $< .001$ ). For both child and parent ratings of fatigue, child mental health was the most significant predictor of fatigue across all timepoints. Adding child and parent mental health variables in the second block of the regression substantially increased the variance explained for both child and parent ratings of fatigue.

**Conclusions:** These findings confirm that fatigue continues to improve to 3 months post-concussion and provides support for social constructs, such as child behaviour problems and post-traumatic stress, to be strong predictors of fatigue during the first three months following the injury.

## Out of Sync: Concussions disrupt biological clocks in the brain and body

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**Background and Objective:** Concussion is a common injury, particularly among adolescents. In this age group falls, motor vehicle accidents and sports related injuries are the most common causes. Given that adolescence is a period of vital developmental processes in the brain such as synaptic pruning and prefrontal cortex maturation, brain injuries at this time could lead to long-term consequences. Upwards of 70% of concussion patients experience insomnia or sleep disruption symptoms, such as fatigue. Lack of proper sleep has been shown to impede recovery. Since sleep is a well-known circadian rhythm that requires coordination of various brain regions to the external environment, we sought to determine if concussion induced changes in circadian clock genes in the central and peripheral nervous system, in a translationally relevant rodent model.

**Methods:** We induced repetitive concussions in male and female adolescent rats. One-week post-injury we euthanized the rats at multiple time points through the day and night and dissected the hypothalamus, hippocampus, and cerebellum from the brain along with the liver and small intestine from the peripheral nervous system. In each of these tissues we analysed the expression of the circadian clock genes; *per1*, *per2*, *cry*, *clock*, *bmal* and *rev-erb- $\alpha$* . Disruption to normal patterning of these genes suggests desynchronization of the circadian clock.

**Results:** We found main effects for time in nearly all the genes and regions we examined ( $p < 0.05$ ), indicating they displayed circadian rhythms. *Per1* was significantly altered by sex, injury and time in the hypothalamus, liver, and small intestine. *Per2* expression was significantly different in the hippocampus depending on injury and sex. *Cry* was altered in the liver, *clock* was affected in the cerebellum, hippocampus, and small intestine, and *bmal* was changed in the hypothalamus hippocampus and liver depending on sex, time, and injury or a combination. Finally, *rev-erb- $\alpha$*  was altered in the hippocampus, liver, and small intestine also depending on sex, time, and injury ( $p$ 's  $< 0.05$ ).

**Conclusion:** This data indicates that an animal model of concussion produces differential changes to clock gene expression in the brain and body. These preclinical findings have relevance to concussion patients as the brain and body may be losing synchrony with one another and the external environment contributing to sleeping problems and general dysfunction post-injury.

# Development of the Melbourne Paediatric Concussion Scale (MPCS) to improve subacute management of paediatric post-concussion symptoms

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**Background and Objectives:** Paediatric concussion is often associated with the presence of post-concussion symptoms (PCS) that tend to resolve within four-weeks of injury. Persisting PCS (pPCS) have been reported in around 30% of children. In the absence of valid and reliable biomarkers, symptom scales remain a crucial part of concussion assessment and management. In this context, scales must satisfy several functions to support clinicians, including aiding diagnosis, monitoring recovery, recognising those at risk of pPCS, and guiding interventions. Commonly used paediatric symptom scales, developed and validated largely for diagnostic purposes, are limited in their ability to fulfil these various clinical requirements. The Melbourne Paediatric Concussion Scale (MPCS) represents a modification of the Post Concussion Symptom Inventory (PCSI), developed with the aim of improving the subacute management of paediatric concussion. The MPCS adds ten additional items to the PCSI and includes domain classifications. These aim to improve symptom monitoring over time and support clinician decision making around appropriate treatment.

**Method:** The MPCS was developed by consensus of clinical researchers with expertise in paediatric concussion. The clinicians represented several disciplines including emergency medicine, neurosurgery, rehabilitation, physiotherapy, neuropsychology, and clinical psychology. Additional items were discussed amongst clinicians until unanimous agreement. All MPCS items were later classified into symptom domains.

**Results:** The input of several clinical disciplines in the modification of the PCSI led to the addition of ten items. MPCS items were classified into nine symptom domains: neurological, cognitive, mood, behaviour, autonomic, sleep, cervical, vestibular, and hormonal. The rationale for, and process of developing the revised measure will be presented.

**Conclusions:** The MPCS has the potential to improve subacute paediatric concussion management by providing clinically important information above that of the PCSI. The multidisciplinary expertise of several clinician-researchers led to the development of ten items and domain classifications, which provides information that may improve symptom monitoring over time and the nature and order of appropriate treatment.



# Moving forward on the road to recovery after concussion: Participant Experiences of i-RECOVeR a novel interdisciplinary intervention for persistent post-concussion symptoms

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**Background and Objectives:** Many factors contribute to persistent post-concussion symptoms (PPCSs) after mild traumatic brain injury (mTBI), necessitating multi-modal treatment. *Interdisciplinary Rehabilitation for Concussion Recovery (i-RECOVeR)*, a novel 12-week intervention for PPCSs, was evaluated in a pilot single case experimental design. Quantitative findings underscored the benefit of i-RECOVeR in not only reducing PPCSs burden but also contributing to functional goal attainment. Quantitative findings alone, however, were unable to illustrate the extent to which these improvements impacted the daily living experiences of individuals with mTBI. The present study aimed to explore participant experiences of i-RECOVeR and its impact on symptoms, daily function, and concussion beliefs, as well as informing the feasibility and acceptability of the treatment from the end-user perspective.

**Method:** Semi-structured interviews were conducted 1-month post-treatment via videoconferencing with 13 individuals (61% female) with mTBI ( $M_{age} = 37.77$  years,  $SD = 16.27$ ), transcribed, and analysed thematically.

**Results:** A range of sub-themes were identified and categorised under three themes which reflected participants' i-RECOVeR treatment journeys from concussion to life after treatment. The first theme, "*Dissatisfaction with Previous Treatments*", reflected personal experiences prior to commencing i-RECOVeR. The second theme, "*Active Ingredients of i-RECOVeR*", reflected participant experiences of the intervention. Participants valued the tailored, flexible, and interdisciplinary nature of i-RECOVeR. Clinicians were described as experts who cared and worked well as a team. The third theme, "*Moving Forward*", illustrated outcomes derived from i-RECOVeR including change in symptoms, resumption of activities, change in beliefs, and becoming more mindful, with some describing it as a life changing experience.

**Conclusions:** This novel study evaluated participant experiences of an interdisciplinary rehabilitation program for PPCSs after mTBI. Findings from this study provide further support for the feasibility and acceptability of i-RECOVeR. Participant reflections provide end-user insights into the facilitators and barriers of treatment compliance and response, providing valuable feedback which will support the design of a phase-II randomised controlled trial.

## Evaluation of the feasibility and preliminary efficacy of i-RECOVeR: A novel 12-week intervention for persistent post-concussion symptoms after mild traumatic brain injury

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**Background and objectives:** Multiple factors contribute to persisting post-concussion symptoms (PPCSs) and current clinical guidelines emphasise an interdisciplinary approach to concussion management. There is, however, limited research into interdisciplinary treatments for PPCSs. This study aimed to evaluate the feasibility and preliminary efficacy of a novel interdisciplinary intervention for PPCSs.

**Method:** A single-case experimental design was repeated across fifteen participants with mild traumatic brain injury. The 12-week intervention incorporated psychology, physiotherapy, and medical treatments. Primary feasibility outcomes included recruitment and retention rates, adverse events, and treatment fidelity. Secondary outcomes included measures of PPCSs severity, mood, sleep, fatigue, physical functioning, quality of life, illness perceptions, and goal attainment. Change in PPCSs was evaluated using systematic visual analysis and Tau-*U*. Clinically significant change on secondary outcomes was explored descriptively.

**Results:** A 61% recruitment rate and 81% retention rate was observed. High treatment fidelity was observed with no adverse events reported. Moderate-large effect sizes in reducing PPCSs were observed in 13/15 cases, with 7/15 reaching statistical significance. Improvements were maintained at 1- and 3-month follow-up. All participants had clinically significant improvements in at least one outcome, with 81% of individual therapy goals achieved.

**Conclusion:** Support provided for the feasibility and preliminary efficacy of a novel 12-week intervention for PPCSs in reducing PPCSs burden and contributing to functional goal attainment. These promising findings suggest that translating the case-series to a phase-II randomised trial is feasible and worthwhile. This will add to the evidence base for concussion management and contribute to improved outcomes for individuals living with PPCSs.

## Patterns and complexity of mental health presentation in adults with acquired brain injury

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**Background and Objectives:** Mental health conditions are common following acquired brain injury (ABI), with estimates indicating almost 80% of individuals with ABI will develop depression or anxiety in the 5 years following their injury. These disorders are disruptive, having been linked to poor cognitive and functional outcomes, reduced engagement with post-acute rehabilitation services and worse quality of life. Despite this, patterns of mental health presentation and complexity have not been comprehensively examined in post-acute brain injury populations in Australia to date, preventing the development of effective screening tools to identify psychological support needs.

**Method:** Retrospective cohort study of 1,011 adults with ABI admitted to neurorehabilitation and disability services in Western Australia (WA), 1991-2020. Patterns and complexity of mental health presentation will be identified using electronic medical records and linked hospital and emergency department (ED) data from the WA Data Linkage System. Mental health presentation will be examined across 14 diagnostic categories using the International Classification of Diseases 9<sup>th</sup> and 10<sup>th</sup> edition. Cluster analysis will be conducted to identify clusters of commonly co-occurring mental health conditions to allow identification of key diagnostic groups for targeted screening to inform effective person-centred care during the post-acute period.

**Results:** Preliminary results indicate that mental health conditions are highly prevalent in the cohort with 56.1% with a recorded mental health hospitalisation prior to admission to post-acute services, indicating significant mental health burden. Individuals diagnosed with traumatic brain injury (TBI) had significantly higher rates of mental health hospitalisation (64%) than those with stroke (49%) during the post-acute phase. Alcohol related substance use was the most common diagnosis seen in mental health hospitalisations.

**Conclusions:** Mental health difficulties are common in individuals with ABI at admission to post-acute services. Early identification and management of mental health comorbidities is critical to allow successful engagement with post-acute services and maximise rehabilitation outcomes. The identification of key diagnostic clusters will allow the development of effective screening tools, improving the capacity to evaluate mental health needs upon admission to services. Implications will be discussed.

## Aphasia, depression, and psychological therapy (ADaPT): Modified cognitive behavioural therapy to treat depressive symptoms in stroke survivors with aphasia

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**Background and Objectives:** Cognitive behavioural therapy (CBT) can effectively treat depression in the general population. However, to date, no study has evaluated the use of CBT tailored to specific communication needs of stroke survivors with aphasia. Our aim was to explore the feasibility and preliminary effectiveness of a modified CBT intervention in treating depressive symptoms.

**Methods:** We repeated an ABA withdrawal/reversal single case design across ten participants. Participants were assigned a randomised baseline (2.5, 4.5, or 6.5 weeks), then completed 10 intervention sessions and a 4-week follow-up. Data were analysed visually and statistically controlling for baseline trend.

**Results:** Five participants self-reported decreased depression ratings during the intervention phase. Improvement was sustained for most participants in the withdrawal phase, and a few additional participants improved during this phase. Close others reported improvement in depressive symptoms among 8 participants. Improvement was sustained for most participants. Close others reported improvement in anxiety symptoms among 8 participants, which was sustained for most participants.

**Conclusion:** Our results provide preliminary support for the feasibility and effectiveness of a modified CBT intervention to reduce depressive symptoms in people with aphasia; however, further work is required to understand variable response to intervention across participants. Additional treatment sessions might be necessary to sustain improvement in mood. We also note discrepancies between self-report and close other report of mood. Suggestions for future outcome measures are discussed.

# Suicidal Ideation, Self-Harm, and Internalising Psychopathology Following Traumatic Brain Injury

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**Background and Objectives:** Traumatic brain injury (TBI) has been associated with an increased risk for suicidality, yet there has been very limited research investigating this issue. Our aims were three-fold and involved exploring the following: 1) patterns and profile of suicidality and self-harm symptoms; 2) associations between demographic/injury-related factors and suicidality and self-harm symptoms; and 3) associations between transdiagnostic dimensions of internalising psychopathology and suicidality and self-harm.

**Method:** This observational cross-sectional study involved 408 participants with predominantly severe TBI who were on average 10 years post-injury. Participants completed the Expanded Version of the Inventory of Depression and Anxiety Symptoms. Frequency statistics, descriptives, visualisations, non-parametric tests for univariate associations, and multiple linear regression analysis was used to analyse the ability of demographic, injury-related and psychopathological variables to predict suicidality.

**Results:** In the previous two weeks, 21% of the sample reported thinking about suicide (most often ‘a little bit’) and 5% reported hurting themselves purposefully (most often ‘a little bit’). Higher suicidality was associated with fewer years post-injury, unemployment, not being in a relationship, and currently receiving mental health treatment. Further, suicidality was significantly positively correlated with 16 internalising symptom dimensions, but not with euphoria. On the other hand, suicidality was not significantly associated with age, sex, years of education, TBI severity or TBI cause. The combination of demographic, injury-related and psychopathological variables explained 45% of the variance in suicidality, with four uniquely significant predictors: *traumatic intrusions*, *ill-temper*, *panic*, and *low wellbeing*.

**Conclusions:** Although a fifth of the sample endorsed suicidal ideation, this was mostly at mild levels. Self-harm was even less prevalent. We identified a profile of demographic, injury-related, and demographic factors that were associated with these issues. Taken together with a transdiagnostic perspective of psychopathology, we found that, traumatic intrusions, ill-temper, panic, and low wellbeing may also be particularly important to understanding suicidality in this population.

## Understanding the experience of participating in a poetry group for people with severe acquired brain injury

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**Background and Objectives:** Social isolation is a devastating and frequently reported phenomenon for people with severe acquired brain injury (ABI). Group-based interventions provide an opportunity for social interaction and connection through shared experience, and creative groups have been found to provide opportunities for expression beyond that of conventional activities. The poetry group in this study was part of a larger multi-component community connection program (M-ComConnect), an innovative intervention program designed to increase community connection and activity for adults with severe ABI.

The objective of this study was to understand the experience of participating in a poetry group for adults with severe ABI.

**Method:** Participants were seven adults with severe ABI (5 male, 2 female, aged 26-57 years) who were recruited via the M-ComConnect program after expressing an interest in poetry or creative arts in their initial interview. The poetry program involved 8 group poetry sessions, held fortnightly in a university setting and facilitated by two speech pathologists. Sessions were informal with an emphasis on humour and fun and involved exploring and experimenting with poetic styles collaboratively and independently. Individualised 1:1 intervention sessions with an allied health clinician occurred in the intervening weeks to support completion of poetry writing tasks and maximise successful participation in group sessions. Qualitative design and thematic analysis were employed to capture and understand participants' experience of the poetry group program.

**Results:** Preliminary findings reveal increasing comfort, creative and social confidence, and connection with others across the course of the program for most participants. Key contributing factors were the group experience (*feeling valued, understanding each other, appreciating individuality and humour*), and the creative experience (*giving it a go, feeling good*). Individual intervention sessions were instrumental in providing practical support (*being prepared*) and building confidence. Communication challenges were identified as a barrier to building connections for some participants.

**Conclusion:** A creative poetry group with an individualised intervention component was acceptable to adults with severe ABI and feasible to run. Participants experienced emerging comfort, confidence and connection in this interactive space. Practice implications are highlighted.

## Identifying mental health symptom clusters in young adults with childhood traumatic brain injury

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**Background and Objectives:** Depression, anxiety, and stress are common and persistent symptoms after childhood traumatic brain injury (TBI), which often co-occur. However, the nature of their co-occurrence has not been investigated in childhood TBI survivors. This study aims to explore the presence of symptom clusters in young adults with childhood TBI based on symptoms of depression, anxiety, and stress.

**Method:** We evaluated 54 young adults who sustained TBI in childhood: mild TBI = 14, moderate TBI = 27, severe TBI = 13. Scores from the Depression Anxiety Stress Scale (42-item version) were used, and cluster group membership was identified using two-step clustering and hierarchical clustering (Ward's Linkage) methods.

**Results:** No statistically significant differences were found among the TBI severity groups on symptoms of depression, anxiety, or stress. However, two symptom cluster groups were identified based on these three symptoms, including a *Low Risk (LR, n = 66%)* and a *High Risk (HR; n = 33%) group*, with the latter showing significantly higher symptoms of depression, anxiety, and stress (all  $p < .001$ ).

**Conclusions:** Using cluster group methodology, we provide evidence for distinct mental health profiles in a subgroup of childhood TBI survivors in the very long-term post-injury. These findings indicate the need for ongoing and long-term mental health screening following childhood TBI.

## A digital behavioural activation intervention for people with aphasia: Accessibility and acceptability

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**Background & Objective:** Behavioural Activation (BA) has shown potential to treat depression in those with stroke, including those with aphasia. Accessibility remains a concern. Online BA may be able to address this. The principal objective of this study was to consider accessibility and acceptability of a digital BA intervention developed for people with aphasia.

**Method:** A digital behavioural activation intervention adapted from the Black Dog Institute Healthy Minds program was modified on the website building service squarespace.com. The modified program was shown to 11 participants with post-stroke aphasia and their views sought via semi-structured interviews. Supported by nVivo software, the interviews were subject to Reflexive Thematic Analysis.

**Results:** Overall participants considered the intervention accessible and acceptable. Improvements were suggested for layout and content including text readability, vocabulary level, sentence length, images and the use of auditory support. Cognitive load was also raised as was the presentation style of activity diaries. Engaging a support person had mixed appeal.

**Conclusions:** Numerous suggestions to improve digital BA intervention so it would be more accessible and acceptability to people with aphasia after stroke were accessed. Incorporating these into a revised digital BA intervention for a proof-of-concept trial is warranted.

## A national survey of NDIS participants: Rebuilding trust based on solutions grounded in the experiences and perspectives of NDIS participants with neurological disability

Di Winkler<sup>1,2</sup>, Kate D'Cruz<sup>1,2</sup>, Mark Brown<sup>1</sup>, Stacey Oliver and Jacinta Douglas<sup>1,2</sup>

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**Background and Objectives:** Nearly half a million people with disability in Australia are participants of the National Disability Insurance Scheme (NDIS) and receive funding for support services, equipment and housing. While the NDIS has brought many positives to the lives of people with disability, numerous concerns have been raised regarding the administration and costs of the scheme. With a new federal Government promising to review and reform the NDIS, the Summer Foundation, in partnership with People with Disability Australia (PWDA) conducted a national survey to bring the participants' voices to the discussion. The aim of the survey was to identify potential solutions to improve the NDIS, grounded in the experiences of NDIS participants.

**Method:** An online survey was conducted in June-July 2022. NDIS participants, their families and close others were invited to share their experiences of the NDIS, and perspectives on what is working and what needs improvement. Responses to short-answer questions were analysed using inductive thematic analysis methods.

**Results:** In total, 477 people responded to the survey. Of these, 55.3% (n = 264) were NDIS participants, and 44.7% (n = 213) were a family member or friend representing a participant.

286 respondents indicated their disability type as neurological disability, inclusive of acquired and progressive neurological conditions. This presentation will focus on the experiences of participants with neurological disability. While respondents shared examples of how the NDIS has helped them to achieve important and transformative outcomes in their lives, fears and frustrations were expressed. Clear and practical recommendations for improving the NDIS were identified across 4 main themes: 1) Communicating and collaborating in alliance with participants; 2) An easier and more responsive system; 3) Not living in fear of funding being cut; and 4) Supporting people with disability to live well. **Conclusions:** The findings of the survey reveal a conundrum at the heart of the NDIS participant experience: while many individuals see the real benefits of the NDIS, there is simultaneously a lack of trust and confidence in its administration. More needs to be done to rebuild trust based on solutions grounded in the experiences and perspectives of NDIS participants. The perspectives of participants must be at the centre of the development of a new vision for the NDIS.

## Primary health care needs and service utilisation of NDIS participants with stroke and acquired brain injury

Stacey Oliver<sup>1,2</sup>, Di Winkler<sup>1,2</sup>, Jacinta Douglas<sup>1,2</sup>, Adam McLeod<sup>3</sup> and Rothman Rebecca<sup>1</sup>

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**Background and objectives:** General practitioners (GP) play an important role in the health management and early prevention of comorbidities of people with stroke and acquired brain injury (ABI). The aim of this study was to describe general practice utilization and health needs of National Disability Insurance Scheme (NDIS) participants with stroke and those with ABI. Findings will inform the development of services that better target the needs of people living with stroke and ABI.

**Method:** This research uses de-identified GP data from Outcome Health's Population Level Analysis and Reporting tool (POLAR). POLAR GP health records in the Eastern Melbourne Primary Health Network were linked with National Disability Insurance Agency data. Analysis of data was conducted for comparisons across people with Stroke (n = 216), people with ABI (n = 626), other NDIS participants (excluding stroke or ABI) (n = 11,746) and the rest of the population (RoP) (n = 3,059,645) aged between 20-64 yrs.

**Results:** People with stroke and ABI had more chronic conditions than other NDIS participants (+17.18% and +6.48%, respectively) and the RoP (+88.36% and +86.86%). Further comparisons showed people with ABI had 17.06% more diagnoses of mental health conditions than people with stroke. People with ABI had 49.01% more alcohol and other drug related conditions than people with stroke, and 64.66% more than other NDIS participants. People with stroke had an increased diagnosis of diabetes, compared to people with ABI (+56.26%) and other NDIS participants (+56.92%). Consistent with living with more chronic conditions, people with stroke and people with ABI were higher service users and received more preventative care than the RoP. However, people with stroke received: less screening for anxiety and depression than people with ABI (-246.78%) and other NDIS participants (-301.03%), less mental health plans (ABI = -51.27%; other NDIS = -65.08%) and less health assessments (ABI = -79.69%; other NDIS = -137.46%), but more care plans (ABI = +22.23%; other NDIS = +23.86%), blood pressure readings (ABI = +25.92%; other NDIS = +30.30%) and breast cancer screenings (ABI = +26.75%; other NDIS = +25.09%).

**Conclusions:** Results provide insights into the health needs and general practice utilization of people living with stroke and ABI. This knowledge is a starting point for co-design workshops that will inform cohort specific interventions and resources to improve health outcomes and GP experience.

## “You’re Supporting the Whole Person”: Model of Quality Support Grounded in the Experience of Adults with Acquired Neurological Disability, Disability Support Workers and Close Others

Megan Topping<sup>1,2</sup>, Jacinta Douglas<sup>1,2</sup> and Di Winkler<sup>1,2</sup>

<sup>1</sup>La Trobe University, Melbourne, VIC, Australia and <sup>2</sup>Summer Foundation, Melbourne, VIC, Australia

**Background and Objectives:** Adults with acquired neurological disability require paid disability support to live an ordinary life. However, little is known about what influences support quality. This project aimed to build a holistic understanding of the factors that influence the quality of support to inform practice and policy and improve the quality of support for people with acquired neurological disability. Moreover, this project considers quality support in the context of the National Disability Insurance Scheme and health professionals working effectively with support workers.

**Method:** Guided by constructivist grounded theory, three studies were conducted involving in-depth interviews with 34 participants (12 adults with acquired neurological disability, 12 support workers and 10 close others). Grounded theory analysis was conducted, and a model of quality support was developed from each perspective. Following independent analysis, the identified themes were compared and corroborated to build a holistic model of support grounded in the lived experience of people with disability, close others, and support workers.

**Results:** With considerable congruence between the perspectives, the model of quality support depicts a multi-level system with factors in the dyadic space between the person with disability and support worker, the support team level and broader sector and system levels. Primarily, the support worker needs to recognise the person as an individual and see them as the expert in their support needs, and the dyad needs to work well together. Beyond the dyadic space, a committed, competent and interested support team is required. At the sector level, working conditions influence whether support workers feel valued and are held accountable, and in turn delivering quality support. Overwhelmingly, people with disability need to have authentic choice to facilitate quality support and feel in control of their lives.

**Conclusions:** This project is the first to systematically build a holistic model of individualised quality support based on the combined perspectives of people with disability, support workers and close others. Most critically, and in line with rights legislation, people with disability need to have autonomy over their supports and be seen as the expert in their support needs. These findings advance our learnings to improve the quality of support for people with disability and important policy and practice implications are highlighted.

## Factors That Influence the Quality of Support Coordination for People with Neurological Disability and Complex Needs: A Scoping Review

Lee Cubis<sup>1,2</sup>, Sharyn McDonald<sup>1,2,3</sup>, Di Winkler<sup>1,2</sup> and Jacinta Douglas<sup>1,2</sup>

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**Background and Objectives:** The National Disability Insurance Scheme (NDIS) provides individualised funding for people with disability in Australia to receive housing, supports and assistive technology that aligns with their needs and preferences. Support coordinators play an important role in enabling people



with neurological disability and complex needs to have choice and control in the utilisation of their NDIS funds; however, their role and the attributes of an effective support coordinator are not well defined. Given the pivotal role that support coordinators play in connecting people with disability to housing, support and assistive technology providers, there is a need for evidence-based guidelines for quality support coordination. Accordingly, the aim of this scoping review was to investigate the skills, characteristics and components of effective support coordination.

**Method:** Eight databases (MEDLINE, PsycINFO, CINAHL, Social Science Premium Collection, Scopus, Embase, Cochrane Library, Informat) were systematically searched from 2012-2022 to identify peer-reviewed literature describing support coordinators working within the NDIS framework. A systematic grey literature search was conducted for the same time period. Key findings from 9 eligible peer-reviewed studies and findings from the grey literature search were integrated to inform overarching principles related to support coordination.

**Results:** The literature describing the roles, responsibilities and attributes of effective support coordinators was limited. Nevertheless, it was evident that support coordination could be a valuable enabler or barrier to participants' choice and control in connecting with providers. Four overarching principles provided preliminary insights into the lack of clarity surrounding the support coordination role; lack of a minimum required qualification or skillset for working as a support coordinator; difficulties connecting NDIS participants with services in a thin market; and the challenges that arise when communication breaks down.

**Conclusions:** Limited literature exists on the practices and individual attributes of successful support coordinators. Further qualitative research is necessary to investigate the components of quality support coordination from the perspectives of people with disability and those working in a support coordination role.

## Workshop: How to join the Community of Practice in “PBS+PLUS” – An evidence-based intervention for challenging behaviours after brain injury: Clinician training through co-designed intervention guidebooks, podcasts, workshops and supervision

Kate R. Gould<sup>1,2</sup>, Jao Carminati<sup>1,2</sup>, Jai Carmichael<sup>1,2</sup>, Kiara Corso<sup>1,2</sup>, Belinda Renison<sup>1,2</sup>, Kim Trezise<sup>1,2</sup>, Nadine Holgate<sup>1,2</sup>, Melissa Capo<sup>3</sup>, Tim Feeney<sup>4</sup> and Jennie Ponsford<sup>1,2</sup>

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**Synopsis of session:** Challenging behaviours are a very common and distressing issue for people with brain injury, family, carers and teams. Many rehabilitation clinicians find this area of practice intimidating and lack adequate training opportunities or confidence. Together with a team led by Prof Jennie Ponsford and Dr Tim Feeney, we recently conducted a randomised-controlled trial of a positive behaviour support intervention, called PBS+PLUS, which is a flexible, individualised, multi-component, person-driven and antecedent-focussed approach to helping people build a meaningful life and self-regulate behaviour after brain injury. We found that PBS+PLUS resulted in significant improvements in behaviour and attaining personally meaningful goals, family members increased their self-efficacy in supporting behaviour change and it was very positively received by most participants and clinicians based on qualitative analyses.

To ensure that this approach is effectively implemented into clinical practice and based on feedback from neurorehabilitation clinicians across Australasia, we have designed a multi-component clinical translation program. This How To session will provide delegates with a detailed overview of each of the training

opportunities now available. These include a clinical intervention guidebook and podcast series which were co-designed together with people with brain injury, family members and clinicians from the trial. The perspectives of co-design participants will be highlighted. The formal training curriculum, workshop and peer supervision options will also be outlined with detailed examples. Feedback and objective outcomes from previous trainees will be shared. Delegates will have the opportunity to ask questions about the available clinical training opportunities and discuss their learning needs.

**Learning objectives:**

1. Learn what the PBS+PLUS intervention approach entails
2. Have a good understanding of the available clinical training opportunities and resources
3. Join the PBS+PLUS Community of Practice

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## Plenary: Navigating a research journey through the islands of the Torres Strait

Sarah Russell<sup>1,2,3</sup>

<sup>1</sup>College of Medicine and Dentistry, James Cook University, Cairns, <sup>2</sup>Cairns and Hinterland Hospital and Health Service, Queensland Health and <sup>3</sup>Australian Institute of Tropical Health and Medicine, James Cook University

**Synopsis:** The Healthy Ageing Research Team (HART) is based at James Cook University and Cairns Hospital. Led by a Geriatrician, the team has been delivering clinical aged care services across the Torres Strait and Northern Peninsula area for more than 20-years. Through this work, we realised there were many gaps in clinical care that needed addressing. This was the beginning of a cycle of ongoing research to address those gaps, translating findings into clinical practice, continuing with service delivery, and then tackling further research questions that arose. This paper will provide an overview of HART's research journey in the Torres Strait in addressing questions such as the prevalence of dementia and risk factors in the region. Our learnings along the way about how to engage in genuine collaborative research including co-design principles involving First Nations communities will also be discussed.

## Thinking small and big: Integrating individual, clinician, and systems levels of understanding to improve outcomes after acquired brain injury

Dana Wong

School of Psychology & Public Health, La Trobe University, Melbourne, Australia

**Synopsis:** To optimise meaningful participation and quality of life for people living with acquired brain injury, the individual and their family must be supported by competent clinicians and accessible services, that in turn are supported by adequately resourced health, disability, and broader societal systems. In her address, Dana will present work that spans each of these levels of understanding, including her research on cognitive and psychological interventions, the clinical competencies necessary to deliver these effectively, and the systemic factors that both enable and form barriers to clinical implementation of best practice in acquired brain injury rehabilitation.

**ABSTRACTS – SATURDAY 6<sup>TH</sup> MAY**

## **Plenary: Emotional and Behavioral Dyscontrol after Brain Injury: Examining Social Cognition Culprits via the James Gross “Process Model of Emotion Regulation”**

Dawn Neumann<sup>1,2</sup>

<sup>1</sup>Indiana University School of Medicine, Physical Medicine and Rehabilitation Department and <sup>2</sup>Rehabilitation Hospital of Indiana (RHI)

**Synopsis:** Chronic problems with emotional and behavioral dyscontrol are quite common after brain injury, and frequently perceived to be more disruptive and distressing than cognitive or physical sequelae. The Process Model of Emotion Regulation (PMER), developed by James Gross, describes core factors (situation, attention, and appraisal) that influence human emotional and behavioral responses, as well as opportunities to regulate these responses. Social cognition entails cognitive processes that contribute to how one attends to, interprets, and uses information from social situations to interact with others and the world around them. Social cognition can be mapped directly onto the Process Model of Emotion Regulation in order to understand the roles that social cognitive factors play in emotional and behavioral dyscontrol after brain injury, and how social cognition can be a treatment target for better emotion and behavioral regulation. This keynote presentation will describe how two social cognition deficits fit into the Process Model of Emotion Regulation and contribute to emotional and behavioral problems after brain injury: alexithymia and negative attribution bias. Alexithymia is a deficit in which one has difficulty attending to and accurately appraising emotions. Negative attribution bias is the tendency to unduly appraise others' actions as intentional, hostile and/or as the cause for an undesirable outcome. This presentation will describe empirical findings from a series of studies linking alexithymia and negative attribution bias with affective disorders and behavioral problems after brain injury. The presentation will conclude with an example of addressing a social cognition deficit through the process model of emotion regulation framework to improve emotional and behavioral outcomes for people with brain injury.

## **The developmental course of ADHD in children and adolescents**

Emma Sciberras

Deakin University, Melbourne, Australia

**Synopsis:** This keynote presentation will cover what is known about the outcomes for children and adolescents with ADHD over development. The presentation will focus on a broad range of outcome domains including mental health, social relationships, academic functioning and broader quality of life. The keynote presentation will also cover how the signs and symptoms of ADHD change across development. Strengths and positive outcomes will be considered, as well as factors that promote positive outcomes over time.

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## Concurrent Sessions: Capacity Building for Providers of Cognitive Rehabilitation: A Needs Analysis

Jennifer Fleming<sup>1</sup>, Sarah Prescott<sup>1</sup>, Larissa Claridge<sup>1</sup>, Emmah Doig<sup>2</sup>, Emma Finch<sup>1,3</sup> and Henry Julie<sup>4</sup>

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**Background and Objectives:** Acquired brain injuries can result in cognitive impairment, impacting on psychosocial outcomes. Practitioners working in cognitive rehabilitation require ongoing training to stay up to date with new research and best practice interventions. Due to the changing nature of service provision in Queensland, Australia, the training of practitioners working in cognitive rehabilitation is vital. The aim of this study was to conduct a needs analysis to inform the development of a capacity building program for cognitive rehabilitation providers.

**Method:** A cross-sectional online survey gathered data from providers of cognitive rehabilitation services in Queensland on demographic information, previously completed training, desired training opportunities and delivery methods, and barriers and facilitators to engaging in training.

**Results:** Of 103 respondents, there were 67 occupational therapists, 17 speech pathologists, 12 psychologists and 7 social workers with a broad range of practice experience. Participants perceived a need for more training in cognitive rehabilitation, with executive function and functional cognition the most desired topics. Ratings of knowledge, skills, and confidence were significantly and positively correlated with the amount of training received in cognitive rehabilitation (all  $p < 0.01$ ). Barriers to completing continuing professional development were time limitations and affordability, and facilitators were flexibility, workplace support, therapist mindset and targeted content.

**Conclusions:** Providers of cognitive rehabilitation in Queensland reported a strong need for further training delivered in flexible format to improve their skills, knowledge and confidence. This needs analysis will inform the development of a pilot capacity building program funded by the National Injury Insurance Agency Queensland.

## Financial capability in adults with acquired cognitive impairment: Meaning and models

Sarah Swan, Freyr Patterson, Jennifer Fleming and Terra Bredy

School of Health and Rehabilitation Science, University of Queensland, Brisbane, Australia

**Background and Objectives:** The literature on the construct of finance in relation to adults with acquired cognitive impairment has been characterised by a lack of consistency in terminology use, with multiple definitions of varying inter-related terms including financial capability, financial capacity, financial competence, financial management amongst others. Rehabilitation professionals require clarification of terminology and related conceptual frameworks as a basis for the development of appropriate assessment and intervention strategies. The objectives of this study are to explore definitions and conceptual frameworks of financial capability with regard to adults with acquired cognitive impairment.

**Method:** A qualitative evidence synthesis (qualitative systematic review) was completed. Papers were included that reported on conceptual frameworks and models for financial capability in adults with acquired cognitive impairment due to an acquired brain injury (ABI) or other neurological disability, including dementia, multiple sclerosis, Parkinson's disease, etc. Seven health related electronic databases

were searched including PubMed, CINAHL, Embase, PsychInfo, Cochrane, ABI/INFORM and Scopus. Titles and abstracts of identified papers were independently screened by two researchers. Final consensus was reached on included papers following full-text review prior to data extraction and synthesis.

**Results:** Screening identified 3792 papers, and 131 papers were screened at full-text level, with 19 included in the final analysis. Results confirmed inconsistent definitions in relation to financial capability in the health literature. The majority of conceptual frameworks were from the psychology literature and related to the older adult population with dementia. One framework, the 'Financial Management Activity Process' informed by grounded theory qualitative research with ABI participants may provide valuable guidance for clinical practice.

**Conclusions:** Further research is required to explore models of care in relation to financial capability to inform this complex area of clinical practice.

## The value of inpatient rehabilitation following moderate-severe acquired brain injury: an adaptation of the UK cost-efficiency model

Natasha A. Lannin<sup>1,2</sup>, Maria Crotty<sup>3</sup>, Jacqui Morarty<sup>1</sup>, Mithu Palit<sup>1</sup>, J. Ratcliffe<sup>4</sup>, Ian D. Cameron<sup>5</sup> and Lynne Turner-Stokes<sup>6,7</sup>

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**Background:** With ever-increasing financial pressure on health services worldwide, rehabilitation services must be able to demonstrate that they provide value for money. In the UK, cost efficiency is measured by computing the cost of rehabilitation against savings in projected costs of ongoing care in the community (BMJ Open 2016;6:e010238). This study represents the first formal adaptation of the UK cost-efficiency model for use in Australia.

**Objectives:** To examine the cost-efficiency of a specialist inpatient rehabilitation programme.

**Methods:**

- **Design:** A service evaluation using a prospective observational cohort study design in a single centre in Victoria.
- **Measurements:** The Northwick Park Dependency and Care Needs Assessment (NPCNA) uses a computerised algorithm to estimate ongoing care costs in the community. The algorithm was adjusted using NDIS and TAC costings. Cost-efficiency: a) Time taken to offset rehabilitation costs by savings in NPCNA-estimated costs of on-going care, b) net projected lifetime savings. NPCNA data were collected at admission and discharge for all patients admitted to the programme between (1.1.2016-31.12.2017) and at follow-up to 3 years where patients were traceable. Patients were analysed in three groups of dependency based on their Admission NPDS scores: Low (0-9), Medium (10-24) High (> = 25).

**Results:** 196 patients had complete data at admission and discharge. Demographics: Mean age 44.6 years (range 17-78), Males:females 72:28%. Aetiology: Trauma n = 123(63%), Stroke n = 42(21%), diffuse n = 18(9%), other n = 7(4%).

The mean length of stay was 118.4 (95%CI 102.9,136.2) days, mean episode costs were AUD\$147,043 (95% CI:126,861, 1,689,427). The mean overall reduction in 'weekly care costs' was AUD\$8275 (95%CI:7736, 9713) p < 0.001, offsetting the cost of rehabilitation within 5.5 months (95%CI:2.4,9.0). Mean projected net lifetime savings were AUD\$13.4 million (95% CI: 11.4,15.4) per patient. All groups showed significant

reduction in dependency between admission and discharge (paired t-tests:  $p < 0.001$ ) which was sustained at follow-up in those traced at 1-3 years. Savings were greatest in the high-dependency group.

**Conclusions:** This study provides proof-of-principle for use of the NPCNA cost-efficiency model outside the UK and yields further evidence that rehabilitation for patients with complex disabilities represents value for money. For every dollar spent on rehabilitation, approximately \$91 was saved in ongoing care costs alone.

## Guidelines for Assessment and Management of Post-Traumatic Amnesia Following Traumatic Brain Injury: INCOG 2.0

Jennie Ponsford<sup>1</sup>, Jessica Trevena-Peters<sup>1</sup>, Shannon Janzen<sup>2</sup>, Amber Harnett<sup>2</sup>, Shawn Marshall<sup>3</sup>, Eleni Patsakos<sup>4</sup>, Ailene Kua<sup>4</sup>, Amanda McIntyre<sup>2</sup>, Robert Teasell<sup>2,5</sup>, Catherine Wiseman-Hakes<sup>4,6</sup>, Diana Velikonja<sup>7</sup>, Mark T. Bayley<sup>4,8</sup> and Adam McKay<sup>1</sup>

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**Background and Objectives:** Post-traumatic amnesia (PTA) is a common occurrence following moderate-to-severe traumatic brain injury (TBI) and emergence from coma. It is characterized by confusion, disorientation, retrograde and anterograde amnesia, poor attention and frequently, agitation. Clinicians and family need guidelines to support management practices during this phase.

**Methods:** An international team of researchers and clinicians (known as INCOG) met to update the INCOG guidelines for assessment and management of PTA. Previous recommendations and audit criteria were updated based on review of the literature from 2014.

**Results:** Six management recommendations were made: one based on Level A evidence, two on Level B and three on Level C evidence. Since the first version of INCOG (2014) three recommendations were added; the remainder were modified. INCOG 2022 recommends that individuals should be assessed daily for PTA, using a validated tool (Westmead PTA Scale), until PTA resolution. To date, no cognitive or pharmacological treatments are known to reduce PTA duration. Agitation and confusion may be minimised by a variety of environmental adaptations including maintaining a quiet, safe and consistent environment. The use of neuroleptic medications and benzodiazepines for agitation should be minimised, and their impact on agitation and cognition monitored using standardized tools. Physical therapy and standardized activities of daily living (ADL) training using procedural and errorless learning principles can be effective, but delivery should be tailored to concurrent levels of cognition, agitation and fatigue.

**Conclusions:** Stronger recommendations regarding assessment of PTA duration and effectiveness of ADL training have been made. Evidence regarding optimal pharmacological and non-pharmacological management of confusion and agitation during PTA remains limited, with further research needed. These guidelines aim to enhance evidence-based care and maximize consistency of PTA management.

## Protein changes in human cerebrospinal fluid after severe traumatic brain injury reveal potential new biomarkers and therapeutic targets

Sandy R. Shultz<sup>1,2,3</sup>, Anup D. Shah<sup>4,5</sup>, Cheng Huang<sup>4</sup>, Larissa K. Dill<sup>1,2</sup>, Ralf B. Schittenhelm<sup>4</sup>, M. Cristina Morganti-Kossmann<sup>6,7</sup> and Bridgette D. Semple<sup>1,2,3</sup>

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**Background and Objectives:** The pathophysiology of traumatic brain injury (TBI) requires further characterization to fully elucidate changes in molecular pathways. Cerebrospinal fluid (CSF) provides a rich repository of brain-associated proteins. In this retrospective observational study, we implemented high-resolution mass spectrometry to evaluate changes to the CSF proteome after severe TBI.

**Methods:** 91 CSF samples were analyzed with mass spectrometry, collected from 16 patients with severe TBI (mean 32 yrs; 81% male) on day 0, 1, 2, 4, 7 and/or 10 post-injury (8-16 samples/timepoint) and compared to CSF obtained from 11 non-injured controls.

**Results:** We quantified 1152 proteins with mass spectrometry, of which approximately 80% were associated with CSF. 1083 proteins were differentially regulated after TBI compared to control samples. The most highly-upregulated proteins at each timepoint included neutrophil elastase, myeloperoxidase, cathepsin G, matrix metalloproteinase-8, and S100 calcium-binding proteins A8, A9 and A12—all proteins involved in neutrophil activation, recruitment, and degranulation. Pathway enrichment analysis confirmed the robust upregulation of proteins associated with innate immune responses. Conversely, downregulated pathways included those involved in nervous system development, and several proteins not previously identified after TBI such as testican-1 and latrophilin-1. We also identified 7 proteins (GM2A, Calsyntenin 1, FAT2, GANAB, Lumican, NPTX1, SFRP2) positively associated with an unfavorable outcome at 6 months post-injury.

**Conclusions:** Together, these findings highlight the robust innate immune response that occurs after severe TBI, supporting future studies to target neutrophil-related processes. In addition, the novel proteins we identified to be differentially regulated by severe TBI warrant further investigation as potential biomarkers of brain damage or therapeutic targets.

## Implementing skills retraining during posttraumatic amnesia

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**Background and Objectives:** Individuals in posttraumatic amnesia (PTA) benefit from activities of daily living skills (ADL) retraining by improving in functional independence significantly faster than when this is commenced following PTA emergence. This has been shown to be cost effective, however, starting ADL

retraining in PTA is not standard practice in many settings. A training workshop was conducted to support the translation of this intervention into clinical practice of Australian Occupational Therapists (OTs). This study evaluated the impact of these translational efforts.

**Method:** 44 Australian OTs who completed the training workshop in skills retraining during PTA completed pre-post ratings of their confidence, knowledge and skills regarding PTA management and the manualised intervention (e.g., errorless learning). 20 months following the training workshop, nine of the OTs, an OT manager and research funder completed semi-structured interviews exploring their perspectives of implementing the intervention. The Consolidated Framework for Implementational Research informed the interview and thematic analysis was conducted.

**Results:** All knowledge and skills-based ratings (e.g., implementing errorless learning) showed significant improvement from pre- to post-workshop ( $p = 0.00$ ). Confidence in ADL retraining during PTA significantly improved also ( $p = 0.00$ ). Follow-up thematic analysis revealed seven themes, contextualised by implementation influences from the organisation, OTs and patients. Themes highlighted various barriers and facilitators of employing the intervention. Needing time and resources and willingness to implement change were influenced by the organisation, with some influence from the clinician also. The need for knowledge and skills and working as a team sat at the OT level but with consideration from the organisation in shared knowledge and a team approach in implementation. Three themes emerged at the patient level; tailoring the intervention to the patients' needs, intervention delivery improving patient outcomes, and that overall, OTs practice in working with individuals during PTA has changed.

**Conclusions:** Training OTs in skills retraining for individuals in PTA is helpful from a clinician perspective. Effective translation of this intervention in routine practice, however, requires further consideration of the barriers and facilitators presented through clinician interviews.

## Investigating the effectiveness of a capacity building program for cognitive rehabilitation providers

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**Background and objectives:** Cognitive impairment is common after brain injury and has been shown to negatively affect rehabilitation outcomes. Cognitive rehabilitation needs to be individualised and evidence-based and is a complex area of practice requiring specialised training. With allied health workforce expansion, there is a clear need for ongoing continuing professional development to enhance the knowledge, skills and confidence of clinicians providing rehabilitation for people with traumatic brain injury. In response to this need, a tailored cognitive rehabilitation capacity building program was developed and piloted with a multidisciplinary group of clinicians. The aim of this study was to evaluate the effectiveness of the pilot program.

**Method:** A mixed-method design was employed. Twelve clinicians were selected from those who expressed interest to represent a range of clinical services and disciplines in Queensland, including neuropsychology, psychology, occupational therapy and speech pathology. The program was conducted across a 3-month period and included five self-paced learning modules, four interactive online workshops, two master-classes and an online-discussion forum. Data were collected using an audit of participation in the program components, pre and post questionnaires, and semi-structured interviews at the end of the program to understand clinicians' experiences of the pilot program. Audit and survey data were summarised descriptively, and interviews were analysed using inductive thematic analysis.



**Results:** Participants engaged well with the program. Following participation, there were significant improvements in ratings of perceived knowledge and skills ( $p < 0.05$ ) and confidence ( $p < 0.01$ ). All participants indicated they had made practice changes or intended to as a result of participation, and would recommend the program to others. Four themes were derived from the qualitative analysis: 1) learning through the program, 2) engaging in the program, 3) enhancing practice and 4) supporting future change. Overall, clinicians valued the group discussions in workshops and the inclusion of multiple disciplines.

**Conclusions:** The pilot evaluation provided evidence of the program's effectiveness in meeting the needs of cognitive rehabilitation providers and larger-scale roll-out of the program is recommended.

## Dimensions of self-awareness for adults with acquired brain injury: The impact of hopes, beliefs and expectations on self-awareness rehabilitation

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**Background and Objectives:** Self-awareness impairments are common following acquired brain injury, with cognitive rehabilitation often targeting these impairments to promote engagement in therapy and successful strategy application. The inpatient hospital setting can present challenges with providing a sufficient range of experiences to promote self-awareness to support successful community transition. The aim of this study was to understand the role of different dimensions of self-awareness in the development of self-awareness in the hospital setting and make recommendations for clinical practice.

**Method:** Data were gathered through an audit of clinical records of semi-structured interviews using the Self-awareness of Deficits Interview (SADI) with thematic analysis applied. Practice setting was a public brain injury rehabilitation unit in Australia. Participants included a convenience sample of adults with traumatic brain injury and stroke ( $n = 144$ ) admitted to inpatient rehabilitation who received self-awareness assessment.

**Results:** The theme "Dimensions of self-awareness" included three subthemes that were closely interrelated: 1/ Beliefs, hopes and expectations (i.e., beliefs about abilities; difficulty rejecting false beliefs; hopes for future recovery and return to normality; expectations around task difficulty, task success and need for supports); 2/ Psychological factors (i.e., mood, motivation, denial, acceptance, coping and personality); and 3/ Neuropsychological factors (i.e., cognitive changes). Beliefs, hopes and expectations were influenced by the lack of exposure to real life activities in the hospital setting and lack of opportunity to practice skills in the community context. Expectations for future recovery included a return to "normality" after leaving hospital, or conversely uncertainty around abilities and the level of support required at home.

**Conclusions:** Rehabilitation for self-awareness impairment can be informed by completion of a clinical interview such as the SADI that provides important information about the patient's perspectives on their abilities. Consideration of a person's beliefs, hopes and expectations about their abilities is important to inform an individualised cognitive rehabilitation treatment plan.

# The relative importance of cognitive predictors of prospective memory impairment in adults with traumatic brain injury

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**Background and Objectives:** Prospective memory (PM) refers to one's ability to remember to carry out an intended action in the future. It is the process of forming and retaining a future intention, and then being able to execute it at the appropriate point in time. Previous studies have established an association between traumatic brain injury (TBI) and frequent and persistent PM impairment. PM is a complex cognitive function that impacts on many areas of daily life, and previous studies have linked PM impairment with performance in other cognitive areas, such as attention, memory, processing speed, and executive function. To gain a better understanding of the causes of PM impairment, this study aimed to examine which cognitive functions, as well as demographic and diagnostic factors, predict PM performance in adults with TBI.

**Methods:** A cross-sectional study investigated whether demographic and diagnostic factors, attention, retrospective memory, executive function, and strategy use, predicted PM performance in adults with TBI, differentiating between time-based and event-based tasks. PM performance of 49 adults with moderate-severe TBI was measured using the Cambridge Prospective Memory Test (CAMPROMPT). An array of well-established neuropsychological measures captured other cognitive domains.

**Results:** Multiple regression revealed time-based CAMPROMPT score was predicted by the Digit Span Backward test, errors on Part B of the Hayling Sentence Completion Test (HSCT), and use of notetaking on the CAMPROMPT. The event-based score was predicted by errors on Part B of the HSCT, total recall on the Hopkins Verbal Learning Test (HVLT), and use of notetaking on the CAMPROMPT.

**Conclusions:** Patients with impaired attention and executive function may be expected to demonstrate poorer performance on time-based PM tasks, whilst those with impaired executive function and retrospective memory may be expected to demonstrate poorer performance on event-based PM tasks. Notetaking was associated with improved performance on both time-based and event-based PM tasks. Findings of the current study highlight the need to understand the broader cognitive profile of individuals with TBI, and the influence of specific impairments on the different types of PM. This understanding may then be used to tailor PM rehabilitation programs and enhance daily living outcomes.

# Consumer perspectives of prospective memory rehabilitation incorporating compensatory and metacognitive skills training

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**Background and Objectives:** Prospective memory (PM) impairment can impact the ability to live independently and engage in social and productive activities following traumatic brain injury (TBI). This study aimed to understand consumer experiences of a PM rehabilitation program incorporating compensatory strategy training (e.g., mobile phone calendar) and metacognitive skills training.

**Method:** A mixed methods study with 47 participants from a randomised controlled trial. Participants had moderate to severe TBI and completed a 6-week outpatient compensatory strategy training program (COMP) or COMP plus metacognitive skills training program (COMP-MST) with an occupational therapist which was delivered one-to-one. COMP training incorporated components of PM education, memory aid training, organisational strategy and family training, and practice using compensatory strategies. MST incorporated components of role modelling, verbal, video and experiential feedback, and self-prediction and self-reflection activities, which aimed to facilitate self-awareness. Data were collected via a consumer survey, clinical notes and audio-recorded discussions about program learnings from the final therapy session. Descriptive statistics and framework analysis were used for analysis.

**Results:** Participants were highly satisfied with the program (average satisfaction rating: 9/10, SD 1.3) and almost all (96%) felt that their everyday PM performance had improved following completion of the program. Differences in survey ratings between the COMP and COMP-MST groups were not identified. Program aspects that were valued the most were setting individualised client-centred goals, repetitive training of strategy use, establishing habits and routines, and receiving experiential, verbal and written feedback.

**Conclusions:** A rehabilitation program incorporating compensatory strategy training and metacognitive skills training to improve prospective memory performance was perceived as acceptable and effective by participants with TBI.

## Making Everyday Memory Optimal (MEMO)

Ilana Hepner<sup>1,2</sup> and Laurie Miller<sup>1</sup>

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**Synopsis of session:** Memory difficulties are commonly seen in association with various neurological conditions such as stroke, head injury and epilepsy. These difficulties often have a significant impact on the person's social and emotional function and quality of life. There is growing evidence from the literature for the beneficial effects of compensatory strategies, psychoeducation and restorative techniques on memory function. However, many clinicians have identified a lack of access to adequate tools or training as the main barriers to the provision of memory rehabilitation.

We present our new online memory rehabilitation tool, MEMO (Making Everyday Memory Optimal) that grew out of the well-established face to face memory intervention, ‘Making the Most of Your Memory Program’ (Radford, Say, Thayer & Miller, 2010). We will provide an outline of the MEMO program along with a demonstration of some of the newly developed animated tutorials, quizzes and exercises that have been specifically designed to build up the use of compensatory strategies. For further information on MEMO, please see <https://memorehab.com.au>

**Learning Objectives:** By attending this “How To” session, participants will develop an understanding of:

1. The benefits of memory rehabilitation on participants’ day to day function, emotional state and quality of life
2. How to implement memory rehabilitation in the clinic; this will be achieved through a demonstration of the MEMO online memory rehabilitation tool

## Concurrent Sessions: How (and why) to use social-ABI-lity to support safe and meaningful social media use after brain injury

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**Synopsis of Session:** Increasingly, social media is being used for a variety of purposes and can support people with communication disability to access information, social participation, support, and their consumer rights. However, there are risks to participating in online communities. Due to changes in their cognition and communication, people with acquired brain injury (ABI) experience challenges in using social media, with limited rehabilitation interventions available to support them in its use. We have a professional obligation to respect the autonomy of our clients with communication disability, including their choice to use social media. This workshop responds to the gap in training available for clinicians to gain an understanding of the complexities of addressing social media use during rehabilitation after ABI. In this ‘How to’ session, the following will be discussed: 1) benefits and risks of online social relationships and social media use after ABI, 2) evidence of approaches and strategies to support social media communication skills training, and 3) a bespoke online program, social-ABI-lity, which has designed to support people with ABI to use social media safely and enjoyably. Participants will experience practical, hands-on use of Twitter and activities within the social-ABI-lity program.

**Learning objectives:** Participants will:

1. Describe the benefits and risks of online social relationships and social media use after acquired brain injury;
2. Discuss the complexities of addressing social media use during brain injury rehabilitation;
3. Explain where to find resources available to guide the incorporation of social media skills into collaborative social communication rehabilitation goals.

# Perspectives and Priorities of People with Traumatic Brain Injury (TBI) and Occupational Therapists about Virtual Reality Technology to inform Co-Design of an Occupation-Based Virtual Reality Intervention

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**Background and Objectives:** Virtual reality (VR) has potential for provision of rehabilitation of people with cognitive impairment. It can be designed to simulate everyday activities that may not be accessible 'in real-life' in rehabilitation settings for safety issues, feasibility and cost reasons. VR may enhance engagement in rehabilitation and intensity of practice, with potential for early task practice. Co-design of suitable VR applications is needed to understand priorities and consider appropriate design to meet needs to ultimately enhance uptake in clinical practice. This study aimed to (1) explore perspectives of people with TBI about VR technology and the potential usefulness of VR to address their rehabilitation goals, and (2) explore perspectives of experienced Occupational Therapists about VR technology (usefulness, acceptability, barriers and facilitators to uptake) and preferred VR scenarios to design to facilitate occupation-based rehabilitation.

**Method:** Semi-structured qualitative interviews were conducted with people with lived experience of TBI, and focus groups were conducted with experienced occupational therapists across three health services who provided rehabilitation to people with TBI. Participants were given a brief presentation introducing them to VR (set up process, features and capabilities) and an opportunity to experience immersion and interaction in a 3D simulated kitchen scenario. Lists of identified potential VR scenarios were generated and participants rated each idea as either 1 (not useful in VR) or 10 (extremely useful in VR). Audiotaped data was transcribed verbatim and thematically analysed.

**Results:** 21 occupational therapists with an average of 6.05 years of experience providing cognitive rehabilitation to people with TBI (range = 0.5-26 years) and 4 people all with moderate to severe TBI (average PTA duration = 20.6 days, range = 12-35 days) and an average time post injury of 186 days participated. Most common scenarios identified as most useful across interviews and focus groups included public transport, shopping, and navigating in the community. Both groups also identified the value of addressing cognitive skill components using VR (e.g. attention, memory, executive function).

**Conclusions:** This study has identified key priority areas and design features that inform the development of occupation-based VR technology for use with people with cognitive impairment after TBI.

# Examining equivalence between in-person and telehealth neuropsychology assessments in people living with younger onset neurocognitive disorders

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**Background and Objectives:** People living with younger onset neurocognitive disorders (YOND) experience significant delays in receiving an accurate diagnosis. While teleneuropsychology may bridge the service gap experienced by people living with YOND, there is limited evidence of the equivalence of teleneuropsychology assessments, particularly within younger adult samples with moderate stages of dementia. The current study aimed to determine whether equivalent performances were observed on neuropsychological measures administered in person and via videoconference in a sample of people living with YOND.

**Method:** Participants were recruited from neuropsychiatry and neurology inpatient ward and outpatient clinics, ethically approved research studies, and community advertising. Using a randomised counter-balanced cross-over design, participants with a diagnosis of YOND completed 14 neuropsychological tests, across two sessions with a two-week interim. The videoconference sessions were set up across two laptops using the Healthdirect Video Call platform. To compare results across the test administration sessions, repeated measures t-tests, intraclass correlation coefficients (ICC) and Bland-Altman plots were calculated.

**Results:** Thirty-six ( $M_{age} = 60.47$ ,  $SD = 6.56$ ) with a diagnosis of YOND completed both sessions. Preliminary results indicate no statistically significant differences between the in person and videoconference administration conditions and small effect sizes (ranging from 0.01 – 0.20). ICC estimates ranged from 0.69 to 0.97 across the neuropsychological measures. For most of the measures, Bland Altman plots demonstrated relative symmetry. However, the D-KEFS Colour Word Switching subtest displayed a higher number of negative difference scores, indicating better performance in the in-person administration condition.

**Conclusions:** Preliminary results suggest that performances by people living with YOND are comparable between in person and teleneuropsychology assessment modalities for the majority of neuropsychological tasks. Should further research confirm these preliminary findings, findings will support the delivery of teleneuropsychological assessments.

# “I desperately need to know what to do.” Addressing cybercams in acquired brain injury (ABI): A qualitative exploration of the experiences and approaches of Australian clinicians and service providers

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**Background and Objectives:** Anyone can be scammed, however, post-injury cognitive and psychosocial consequences experienced by people with ABI may place them at higher risk. Scams result in financial loss and deleterious psychological impacts such as shame and mistrust. Post-ABI scams have also interfered with neurorehabilitation. Despite these significant consequences, there are no available psychological

treatments tailored to cyberscam recovery. Little is also known about how the current workforce is addressing cyberscams in people with ABI. This study aims to understand the perspectives and needs of ABI clinicians and service providers in addressing cyberscams in people with ABI.

**Method:** Qualitative study design. Eighteen Australian multi-disciplinary clinicians and service providers were recruited through purposive sampling. Semi-structured interviews explored current treatments, effectiveness of interventions used and recommendations for future cybersafety recovery interventions.

**Results:** Reflexive thematic analysis identified eight themes related to scam vulnerabilities and impacts: “Really? I didn’t see that: Executive Difficulties”; “CyberAbility”; “Financial Stress and Independence”; “Not Coping with the Loss of it All”; “Strong Reactions of Trusted Others”; “Scammer Influence”; “Presence/Absence of Trusted Relationship”; and “Nothing Structured To Do”. Each theme directly related to clinical recommendations such as the provision of psychological and cognitive support, upskilling financial and cybersafety management, increasing meaningful social engagement, and working collaboratively with families and clinical support teams.

**Conclusions:** Treatment recommendations specific to each vulnerability and impact highlight the need for a flexible approach towards cyberscam recovery and treatment in people with ABI. These findings will inform intervention development through a planned co-design phase.

## Electronic assistive technology to support memory function after traumatic brain injury: A systematic review of efficacy and user perspectives

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**Background and objectives:** Technological advances have produced diverse assistive technology (AT) options for use in memory rehabilitation after traumatic brain injury (TBI). This systematic review evaluated the efficacy of electronic AT for supporting different phases of memory after TBI. A further aim was to examine user perspectives on and factors influencing uptake of AT.

**Method:** Following protocol registration, PsycINFO, MEDLINE, CINAHL, Embase, Scopus and Cochrane Library were systematically searched from database inception to June 13, 2022, to identify eligible studies. Quality of methodology was assessed by two independent reviewers.

**Results:** 19 eligible articles included four randomized controlled trials (Class I), five single-case experimental designs (Class II) and 10 pre-post group ( $n \geq 10$ ) studies or single-case studies without experimental control (Class III). Three Class I studies, two Class II studies and eight Class III studies supported the efficacy of AT for improving memory-related functioning. There was most empirical support for the efficacy of AT for improving memory when the encoding phase was externally mediated (i.e., reminders were pre-programmed). User perspectives on the utility of AT and factors influencing uptake informed a novel framework of user characteristics and design features for guiding personalization of memory AT in practice.

**Conclusions:** AT may be effective for improving memory-related functioning after TBI, especially when individuals receive external support to program reminders. Further research is needed to determine whether outcomes vary according to individuals’ level of independence with memory AT (e.g., self-initiated vs pre-programmed reminders) and to evaluate utility of the framework for personalizing AT in practice.

# Cyberscams and Acquired Brain Injury: Developing a Measure to Assess Online Risk and Safety for People with ABI

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**Background and Objectives:** Individuals with acquired brain injury (ABI) may be vulnerable to cyberscams due to cognitive and social changes post-injury. However, lack of existing measures regarding online risk for people with ABI limits our ability to objectively investigate ABI-specific risk factors to cyberscams, assess the frequency of this problem, and evaluate evidence-based interventions. The CyberAbility Scale was developed to assess vulnerability for people with ABI via self-rated statements and a practical scam identification activity. This study aimed to develop and refine The CyberAbility Scale through feedback from ABI clinicians and people with ABI. This forms part of a larger ongoing scale development project.

**Method:** Scale feedback was collected via three rounds of survey feedback with ABI clinicians ( $n = 14$ ) using Delphi methods, and two rounds of feedback with participants with ABI ( $n = 8$ ) who participated in one cognitive interview each. Following each round, feedback was quantitatively and qualitatively summarised and revisions were made accordingly.

**Results:** Key revisions from clinician feedback included removing a total of 12 items deemed clinically irrelevant. Instructions and rating scales were revised to improve clarity. Cognitive interviews identified 15 comprehension errors, and further revisions were made to support recall and response difficulties for participants with ABI. Overall, clinician and ABI participants supported the content and face validity of The CyberAbility Scale. Initial psychometric evaluation will also be discussed.

**Conclusions:** The CyberAbility Scale has the potential to be an effective screening measure of online vulnerability for persons with ABI with utility within clinical and research settings. Further validation work is currently underway.

# Evaluating the Usability and Implementation Potential of Virtual Reality for Hospital-based Brain Injury Rehabilitation

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**Background and Objectives:** Visuospatial attention deficits following brain injury, known as neglect, result in long-term cognitive disability but are underdiagnosed by traditional pen-and-paper methods. Using virtual reality (VR) in rehabilitation is gaining traction and may be more sensitive for detection of



mild neglect. However, effectiveness alone may not translate to clinical feasibility. This could be due to operational, logistical, systemic, and psychological/perceptual barriers that possibly accompany VR. This study explored the usability and implementation potential of VR in a stroke rehabilitation context.

**Methods:** A novel virtual reality attention assessment game ‘The Attention Atlas (AA)’ was codesigned by researchers and clinicians to meet the clinical need for improved neglect assessment. Clinical usability was assessed using the Think Aloud technique, where clinicians were taught how to operate the AA for patients and asked to complete various tasks as though they were administering it for assessment. They were asked to ‘think aloud’ through the process. Then, interviews were conducted to assess the clinician’s perception of the implementation potential in the hospital. Theoretical Domains Framework and Theoretical Framework of Acceptability were adapted for the study to form the interview questions.

**Results:** Instant data analysis was employed following the Think Aloud activity to evaluate usability. Thematic analysis was used for the interviews. A deductive approach was employed, with themes matched to domains in the Theoretical Domains Framework. Additionally, other unique themes were explored inductively. Descriptive statistics and T-tests were used to analyse quantitative data from patients and clinicians who trialled the AA as an assessment of their spatial attention.

**Conclusions:** The AA is part of a new generation of translational neuroscience exploiting the latest advances in technology, including VR technology repurposed from the consumer gaming market. This study finds that the AA was regarded as usable and enjoyable by clinicians and patients. The implementation of the AA in clinical settings appears to be achievable and desirable, with key recommendations outlined. Patients reported wanting to use VR in the future to assist their rehabilitation.

## “Oh it’s changed, it’s changed 10-fold”: Understanding the experience of self-concept change from the perspectives of people with Multiple Sclerosis

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**Background and Objectives:** The relevance of self-concept change in the process of psychosocial adjustment following multiple sclerosis (MS) diagnosis has become more apparent in recent years. Notably, conceptualising how MS diagnosis, and subsequent disease-related changes in daily functioning, prompts self-concept change may allow for a more comprehensive understanding of the psychological impact of MS on those diagnosed. Given the likely relevance of self-concept change to the psychological wellbeing of people with MS, the current study investigated the experience of self-concept change as described by a MS sample.

**Method:** Sixteen people (aged 26-67 years, 62.5% female) who had been living with MS for an average of 12 years, participated in a single online semi-structured interview. The interview schedule covered topics related to the experience of self-concept change, with a specific focus on defining moments that prompted change, as well as changes in everyday activities and the impact of these on self-concept. All interviews were audio-recorded and transcribed verbatim.

**Results:** Thematic analysis guided by phenomenology produced three superordinate<sup>1</sup> themes:

1) Changing life (salient external events that were related to changing views of self), 2) Changing self (the experience of self-concept change), and 3) Changing thoughts (the internal thought processes that served as the filter between changing life circumstances and changing self-views). Overall, external events appeared to facilitate a process of internally driven revaluations and redefinitions of self-concept both globally and within specific self domains.

**Conclusion:** Self-concept change due to MS emerges as a complex internal process, often arising from external challenges and changes in everyday life. These novel findings illustrate the need to better support people with MS to make sense of changes to their self-concept, particularly during key transitions across the illness.

## “Maybe if This Was Addressed Sooner, Maybe Things Might Be Different in Our Relationship. I Don’t Know. But Who Knows?” Sexuality After TBI and its Place in Healthcare: A Qualitative Exploration of Survivors’ Experiences

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**Background:** Studies indicate that up to half of individuals with TBI suffer persistent and multi-faceted changes in sexuality that can stem from the physiological, neurological, and psychological sequelae of TBI. However, research exploring in-depth perspectives and experiences of individuals with TBI regarding sexuality and receiving support remains limited. This study explored the experiences of individuals with TBI around returning to sex, whether they were adequately supported by their healthcare team, and preferences around receiving sexuality support.

**Method:** Purposive sampling was used to recruit 20 individuals who were admitted for moderate to severe TBI at the Epworth acquired brain injury rehabilitation unit in Victoria, Australia. Semi-structured interviews were conducted and qualitatively analysed using reflexive thematic analysis.

**Results:** Five broad themes were identified. First, there is high variability amongst individuals with TBI in their comfort levels and preferences in discussing sexuality, as well as the nature of their post-TBI sexuality. While some individuals experienced no changes and the small minority experienced hypersexuality, most individuals reported hyposexuality after TBI. Hyposexuality was experienced in the form of erectile difficulties, anorgasmia, reduced desire, and cessation or significantly reduced sexual activity. Second, individuals with TBI have low sexual literacy and sexual awareness. Third, clinical conversations around post-TBI sexuality remain infrequent and limited. Four, there is a strong sense of resignation around poor sexuality outcomes. Five, basic psychoeducation from clinicians may help these individuals better navigate these sexuality changes.

**Conclusion:** Our findings suggest that while most individuals with TBI experience changes in sexuality in the form of hyposexuality, they lack the language to define what sexuality means to them and to describe such changes. Limited discussions from their healthcare team means that they are unaware of how sexuality can be impacted after a TBI and help-seeking options. Consequently, those who have experienced sexuality-related difficulties are resigned to accepting poorer sexuality outcomes as their “new normal”. While individuals with TBI feel that sexuality should be addressed routinely, the large variability in preferences and comfort levels necessitates a strong person-centred approach to delivering sexuality support.

## Rebuilding the self through valued action and group connections after acquired brain injury: a qualitative evaluation of the VaLiANT group intervention

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**Background and Objectives:** Cognitive and emotional changes affect most individuals with acquired brain injury (ABI) and are associated with poor long-term outcomes. Intervention approaches typically remain domain specific, and the evidence for these “siloe” rehabilitation approaches targeting cognition and

mood separately remains mixed. Increased valued living following brain injury is associated with better adjustment, meaningful participants, and quality of life. Valued living may be a promising treatment target for enhancing broader outcomes. VaLiANT is a novel 8-week group intervention that uniquely combines cognitive rehabilitation with psychological therapy to enhance valued living and improve adjustment following ABI. We aimed to explore participant acceptability of the intervention while also characterising treatment outcomes that were meaningful to individual participants.

**Method:** Semi-structured interviews were completed with 39 survivors of various brain injury aetiologies ( $M_{age} = 52.12$ ,  $SD = 15.39$ ) following their completion of VaLiANT. Interviews focussed on participant feedback for intervention components and the treatment process while also exploring their experience of the intervention more broadly. Analysis was guided by Braun and Clarke's approach to reflexive thematic analysis.

**Results:** Three themes were generated: 1. *A fuller toolkit for life with brain injury*, 2. *The value of connection and belonging*, and 3. *Finding the 'me' I can be*. Participants described a broad range of positive outcomes including changes in self-identity, reorganisation of values, engagement in different valued behaviours, and learning new skills which were useful in coping with life with ABI. The importance of the group format and ability to connect with other individuals with brain injury was emphasised, however participants expressed a desire for further follow-up and more individual tailoring of the intervention.

**Conclusions:** These findings support the acceptability of VaLiANT. Treatment responses may be unique to each participant, but the integrated combination of cognitive and psychological elements to optimise valued living and the group-based nature of the intervention may be important mechanisms underpinning post-ABI identity reconstruction.

## Adjustment and the redefinition of relational identity after the onset of aphasia

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**Background and Objectives:** Psychosocial difficulties, particularly relationship changes and challenges are frequent and long lasting following the onset of aphasia. These difficulties are important aspects of clinical work with people with aphasia due to their strong ties with psychosocial and physical wellbeing. This presentation describes the experience of people with aphasia in their interpersonal relationships from both cross sectional and longitudinal perspectives and provides novel insights into changes and adjustment over time.

**Method:** Two groups of participants with aphasia were recruited and interviewed. The first group included 10 adults who were recruited through community aphasia groups. Their time post onset varied from five months to nine years with aphasia severity ranging from mild to severe. These participants were interviewed on two occasions around their experiences. The second group included seven participants with mild to severe aphasia, recruited from inpatient rehabilitation units. These participants were interviewed on four occasions beginning around the time of their discharge home and concluding 12 months later. Data was transcribed and coded and analysed using a constructivist grounded theory approach.

**Results:** The findings of this study indicate that there is a pathway of change and adjustment which occurs within relationships for people with aphasia. Although individual variation existed, many experiences were shared and have implications for clinical practice. Early on, people with aphasia retreated into a close inner circle which was subject to challenges and changes. Over time, adjustment occurred within close relationships and participants felt more able to reconnect with others; a process which was often facilitated by those in the inner circle. As reconnections were made, participants evaluated social life with aphasia. Moving through phases of social recovery allowed participants to increasingly redefine their relational identity and consider and accept a modified future with aphasia.

**Conclusions:** Relationships are subject to challenges and changes after the onset of aphasia. Social recovery after aphasia moves through common phases and has strong ties with the redevelopment of a relational self. It is imperative that clinicians understand these processes and provide targeted and timely support to help people with aphasia to build more successful social lives and identities.

## The Lived Experiences of Depression in Huntington's Disease: A Qualitative Study

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**Background and Objectives:** Huntington's Disease (HD) is an inherited neurodegenerative disease characterised by progressive motor and cognitive decline, and neuropsychiatric disturbances. Depression is a common, early clinical syndrome in HD that has debilitating consequences, including poorer sleep, exacerbation of cognitive and functional decline, and suicidality. To date, no published studies have documented the lived experience of depression in HD, despite evidence that depression may be experienced differently in HD compared to the general population. The aim of this study was to investigate the lived experiences of depression in people with the CAG-expansion for HD using qualitative methods. **Method:** We conducted semi-structured interviews with 17 HD CAG-expansion carriers (11 premanifest, 6 manifest) who had current or previous experiences of depression, until data saturation was achieved. The interviews were analysed using thematic analysis.

**Results:** The four key themes that emerged related to (i) the temporal characteristics of depression in HD, (ii) the qualitative changes associated with depression, (iii) psychosocial stressors perceived to contribute to depression, and (iv) the perception of depression as an endogenous feature of HD.

**Conclusions:** Depression appears to be a long-term issue for many HD CAG expansion carriers and has a detrimental impact across multiple domains of functioning. The findings from this study suggest that the characteristics of depression in HD are comparable to depression in the general population, however affective and cognitive symptoms which do not overlap with HD symptoms may be most appropriate for diagnosing depression in HD. Moreover, most HD CAG-expansion carriers attribute their depression to biological and psychosocial factors directly associated with HD. These attributions highlight the importance of tailoring depression treatments according to the beliefs and unique experiences of HD CAG-expansion carriers.

## Incorporating a family focus in community-based transitional rehabilitation following acquired brain injury: process and outcomes

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**Background and Objectives:** Significant others (SOs) of individuals with acquired brain injury (ABI) report negative psychological wellbeing, including heightened caregiver strain and symptomology of depression, anxiety & stress. Transition from hospital to home is a vulnerable time for families. The ABI

Transitional Rehabilitation Service (ABI-TRS) in Brisbane, Australia aims to provide a family-centred model of care. This presentation will discuss 1) key features of the ABI-TRS model designed to operationalise family-centred practice; 2) results from an evaluation of the ABI-TRS (2017-2021) related to SO caregiver strain & psychological well-being.

**Method:** Key features data was drawn from a process evaluation embedded in the larger evaluation. Consenting SOs (n = 76) of ABI-TRS clients completed measures (DASS-21; Caregiver Strain Index (CSI)) at 0 (baseline), 3 and 12 months. Outcomes at 0 & 3 months (start & end of ABI-TRS program) were compared to an historical quasi-control group (HIST; n = 59). Data analysis involved linear mixed model analysis, random intercept models & post-hoc analysis.

**Results:** Service model features relating to family-centred practice include: a 2-week hospital in-reach period to provide information & reassurance regarding the post-hospital discharge pathway; embedding as standard practice needs-based family-centred interventions; provision of home-based therapy with consideration of family demands; and group programs addressing known family stressors post-ABI. Statistical analysis demonstrated significant difference in CSI scores over time for the ABI-TRS & HIST groups; however, ABI-TRS scores were significantly lower than the HIST group at both timepoints, indicating ABI-TRS SOs had lower caregiver strain than HIST SOs at hospital discharge & 3 months post-discharge of the individual with ABI. ABI-TRS SOs demonstrated continuing reduced CSI scores at 12 months (not measured for HIST group). There was no evidence of significant changes, including worsening, in depression, anxiety or stress scores as measured by the DASS-21 for the ABI-TRS or HIST group over time.

**Conclusions:** Key contributors from the service model aimed at contributing to family-centric practice were identified. There is evidence that SOs of ABI-TRS clients made significant improvements (reduction) in caregiver strain over time. Further research is required to consider the carer strain & psychological wellbeing of SOs who did not complete evaluation measures.

## Co-designing with Adults with Acquired Neurological Disability in the Community: A Scoping Literature Review

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**Background and objectives:** Co-design invites people with disability to leverage their lived experience knowledge and is increasingly recognised as critical to improved health service provision and impactful research. While co-design has many benefits, well-defined guidelines on best practice for co-designing with people with neurological disability are yet to be developed. It is important to understand how and when to effectively use co-design with this population, as well as the experience of co-design from the participant perspective. This scoping review aimed to synthesize the literature on the use of co-design in service development and/or research with adults with acquired neurological disability living in the community.

**Method:** Five databases (MEDLINE, CINAHL, PsycINFO, Scopus, and Embase) were systematically searched between the years 2000 and 2022 for peer reviewed qualitative or mixed methods literature. Article screening/extraction was conducted by two independent reviewers and followed the PRISMA guidelines and five-stage framework of Arksey and O'Malley. Studies that met the eligibility criteria were charted, data summarised, and reported, with thematic synthesis of qualitative data.

**Results:** Seventeen eligible studies were identified, providing descriptive information about the operationalization of co-design (how & when) and the lived experience of participating in co-design. There was a range of engagement across the co-design spectrum from consult, engage, partnership and consumer-led. While not all retrieved papers included people with cognitive and/or communication

difficulties, seven papers identified practical strategies to support participation, including use of visual aids, aphasia-friendly formats, smaller workshops, and a balance between time and frequency of sessions. While thematic synthesis of the qualitative data revealed co-design to be a positive experience, participants identified barriers such as role ambiguity, power imbalance, and sought more guidance from facilitators and flexibility throughout the process.

**Conclusions:** Results provide insights into the operationalization of engaging people with acquired neurological disability in co-design. The findings will help formulate recommendations regarding quality practice of co-design and in turn, provide increased vocational and social opportunities for people with acquired neurological disability participating in co-design.

## Codesigning Specialist Disability Accommodation for People with Neurodegenerative Disease

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**Synopsis of session:** This session will discuss why the model of care, consolidated from many years of learned experience, is of critical importance as the starting point for successful codesign and interpretation into a built environment. We will describe how to plan and design a new home for people with a neurodegenerative disorder using the case example of Brightwater Care Group's codesign process to design new homes for current and future clients with Huntington's disease. We will present how to effectively engage key stakeholders in the codesign process, how to evidence meaningful impact of codesign in the final design outcomes, and why this is important for ongoing engagement by the community in utilisation of the environment. Planning a purpose-built home for this population considers the immediate impact of the disease on the individual, the multigenerational context, and the views of stakeholders including family members, advocacy organisations, and clinical specialists who are highly invested and experienced in supporting people from disease onset to end of life.

Huntington's Disease is a complex neurodegenerative disorder that compromises an individual's physical, psychosocial, and cognitive function. People with neurodegenerative disease are among the 6% of NDIS participants who are eligible for Specialist Disability Accommodation (SDA) funding. The NDIS principle of SDA is to stimulate development of a range of housing designed for people with high support needs and is intended to have accessible features to help residents live more independently and allow other supports to be delivered better or more safely. Many SDA properties are designed and developed for broad commercial value and return on investment within the NDIS funding and regulatory environment and provide little more than basic accessibility and generic smart home technology without consideration of design to address cost of care and individual safety and independence. This session will demonstrate how to make SDA work for a specific cohort of people with multigenerational neurodegenerative disease and how effective codesign, with a focus on the model of care, is much more than wide doorways and assistive technology. The codesign process is applicable to translation to other cohorts of people with disability and a range of housing contexts beyond SDA.

**Learning objectives:** Participants will learn:

- How to effectively engage key stakeholders in the codesign process
- Understanding why the model of care is of critical importance as the starting point for successful codesign
- How to evidence the meaningful impact of codesign on final design outcomes
- How to make SDA work in for a specific cohort of people with multigenerational neurodegenerative disease

## Concurrent Sessions: Delivering communication partner training online: A practical workshop on using the novel online communication partner training program, convers-ABI-lity, to improve conversations after traumatic brain injury

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**Synopsis of session:** People with traumatic brain injury (TBI) experience communication breakdown in everyday interactions many years after injury, negatively impacting on relationships. Communication partner training (CPT) are a recommended intervention approach in communication rehabilitation after TBI (Behn et al., 2021; Togher et al., 2014; Wiseman-Hakes et al., 2020) and have been shown to aid in maintaining relationships post-TBI (Bertram et al., 2020). Access to long-term services is essential, however it is especially limited in rural and remote locations (Maas et al., 2017). Digital health has been shown to be effective in overcoming the challenges of travel, improving cost efficiencies and processes, and improving clinical outcomes (Bradford et al., 2016).

Convers-ABI-lity is a novel multimodal intervention platform adapted from the core content of previous evidence-based programs, TBI Express (Togher, 2010) and TBIconneCT (Rietdijk et al., 2019), and developed in collaboration with key stakeholders. This workshop aims to train speech pathologists working with people with TBI and their families in delivering CPT online using convers-ABI-lity. The session will focus on demonstrating how traditional in-person CPT strategies, content and skill development have been translated into an online learning environment for clients and their families. At the end of the workshop, participants will have skills and knowledge about delivering online CPT to increase the accessibility of their services.

**Learning objectives:** Participants will:

- Learn about the benefits of delivering communication partner training in an online environment
- Learn about the importance of collaborating with people with TBI, their family members, speech pathologists and other health professionals for the development of effective interventions
- Familiarise themselves with convers-ABI-lity platform including the content and features across the self-guided client modules and the weekly video conferencing platform.
- Acquire skills and confidence to deliver online communication partner training with clients with brain injury and their close communication partners

## Development of a Narrative Discourse Intervention Approach for a Feasibility Study during Post-Traumatic Amnesia

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**Background and Objectives:** Spoken discourse is an important skill for expressing our thoughts, feelings and opinions, and is key to maintaining social relationships. The ability to construct sequenced narrative discourse (e.g. retelling events/anecdotes) is commonly impacted in patients following traumatic brain

injury (TBI), with significant long-term implications. While there is considerable literature on the importance of narrative discourse and assessment frameworks, there are limited published resources to guide intervention, including optimal time to initiate therapy. To date, there is no published research on the feasibility of commencing structured narrative discourse therapy (NDT) with patients in post-traumatic amnesia (PTA), despite growing evidence that these patients benefit from other allied health therapies. This study reports on development of a research protocol and resources to support clinicians provide narrative discourse therapy with patients in PTA. These were then used in a pilot study investigating the feasibility of this intervention for patients in PTA.

**Method:** We reviewed TBI literature on evidence for discourse therapy, delivery methods, and existing allied health treatments with patients in PTA. Published resources for NDT post-TBI were collated and informed development of a new protocol and materials, using a structured narrative discourse framework. The therapy resources were tested for face validity by three independent TBI specialist SPs. The treatment guide was created providing a structure to support patients to create narratives using picture sequences and generate personal narratives based on a corresponding theme. Data collected to determine feasibility of this intervention protocol included task completion, time, PTA status, participation levels, agitation levels and enjoyment.

**Results:** A treatment guide and set of ten 6-picture narratives encompassing key narrative features were developed. The resources were used to commence a trial of NDT with people in PTA. Initial study findings suggest that the guide and resources support therapy delivery.

**Conclusions:** We report on development of clinically relevant materials to enable intervention for patients to commence while in PTA. To establish a protocol for people with a TBI and associated PTA to re-learn narrative discourse skills is new territory. The pilot study is currently underway and further updates on the study or adjustments to the protocol will be discussed.

## Important treatment outcomes for children and adolescents with cognitive-communication disorders after traumatic brain injury: Gaining consensus among international researchers, clinicians and service managers

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**Background and Objectives:** When planning and delivering treatments for children and adolescents with cognitive-communication disorders (CCDs) following traumatic brain injuries (TBIs) it is important to measure outcomes that are meaningful to clients. Currently, there is no agreement about what constitutes a meaningful outcome for this population. Therefore, we aimed to gain consensus on important outcomes for children and adolescents (5-18 years of age) with CCDs post-TBI, in the post-acute stage of rehabilitation and beyond.

**Method:** An international, three-round e-Delphi study was undertaken. In round one, 11 researchers, 23 clinicians and two service managers responded to three open-ended questions, nominating treatment outcomes that they considered important at three stages of development (5 - 11 years; 12 - 15 years; >15 - 18 years). Results were analysed using qualitative content analysis, mapped to the International Classification of Functioning, Disability and Health (ICF), and combined with outcomes identified in a previous scoping review. The importance of the nominated outcomes will be ranked in rounds two and three.



**Results:** In round one, participants generated 316 treatment outcomes across all developmental stages, which were organised into themes of impairment and bodily functions, activities and participation, quality of life, education and consultation, and self-advocacy and autonomy. Participants primarily nominated outcomes related to bodily functions for children between five to 11 years, while outcomes related to activities and participation were more frequently coded for older children and adolescents. Outcomes related to cognitive functions and social communication were nominated consistently, while outcomes related to relationship safety, employment and independence were nominated for older children and adolescents. Final rounds are in progress and will be reported.

**Conclusion:** Preliminary analysis shows that a large number of outcomes, spanning all domains of the ICF, are important for children and adolescents with CCDs. Yet what is considered important appears to change with developmental stages, moving from outcomes focused on bodily functions to outcomes focused on meaningful participation. The broad range of outcomes nominated may reflect paediatric CCD complexity and the need for clinicians to adopt client-centred care, particularly when supporting children and adolescents from psychosocially distinct sub-populations.

## The lived experience of communication recovery from 6 months to 2 years after severe TBI

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**Background and Objectives:** Individuals with severe TBI are at risk of poor outcomes such as unemployment and breakdown of social relationships. Cognitive-communication disorders can contribute to these outcomes however lack of engagement with rehabilitation services is a key clinical challenge. Insight into lived experience of adults with TBI is lacking in cognitive-communication research. User perspectives are core to patient-centered care and provide insights to enhance clinical engagement. The objective of this study was to provide an understanding of the lived experience of communication recovery after severe TBI from acute to post-acute care.

**Method:** 12 participants were recruited from the TBIBank corpora database (11 males, 2 females, 23-54 years). A qualitative design was employed with structured TBIBank protocol discourse samples obtained at 6 months, 1 year and 2 years post-injury. A qualitative thematic analysis was undertaken to identify the core themes from the perspectives of adults with TBI across the three time points.

**Results:** Three overarching themes were identified: experiences of communication recovery are diverse (Theme 1), varied experiences of recovery and rehabilitation (Theme 2), and continuous and lifelong journey of recovery (Theme 3). Primary communication concerns included presence of anomia, dysarthria, conversational topic difficulties, impacts of fatigue and memory difficulties. Illness narratives revealed the importance of re-establishing a sense of self and the perceived importance of a strong social network post-injury. Taking ownership over one's recovery process was revealed as a facilitator of recovery.

**Conclusions:** Adults with severe TBI have diverse experiences of communication recovery that warrant tailored and long-term service delivery models. Perceived priorities for individuals with TBI may include interventions for anomia, dysarthria, social communication, fatigue, and memory. Facilitating ownership of the recovery process and supporting positive illness narratives may support post-injury identity construction.

# Evaluating TBIBank Grand Rounds: Educators' Perspectives on a Novel Online Multimedia Platform for Communication Disorders of Traumatic Brain Injury

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**Background and Objectives:** Many clinicians who work to support patients with communication disorders of traumatic brain injury (TBI) rate themselves as lacking knowledge to support their clinical practice. Clinicians also report high levels of variability in training and confidence with providing evidence-based intervention to individuals with TBI.

TBIBank Grand Rounds (2021) is a free online educational platform offering users the opportunity to access current, evidence-based learning material on communication disorders of TBI with integrated multimedia content and case-based patient scenarios. Educators are a primary user group of this tool and evaluating their perspectives towards the resource will guide refinements that meet the needs of a primary end-user.

The objective of this study was to examine educators' perspectives of TBIBank Grand Rounds and to identify which components of the TBIBank Grand Rounds should be maintained, removed or modified to meet the needs of this core user group.

**Method:** Respondents who were recruited internationally completed an anonymous online survey. Purposive sampling was utilised to recruit Speech Pathology educators who currently teach communication disorders following TBI. Questions focused on establishing interest and use, interface design, and content evaluation.

**Results:** Preliminary results were obtained from 8 participants (4 male, 3 female), with half of the participants having extensive years of experience teaching (11+ years) and over half of these educators teaching students at both an undergraduate and masters' level. All respondents were already aware of TBIBank Grand Rounds and were either currently using or planning to use the resource in their future teaching. All respondents strongly agreed that the videos and multimedia supported content learning. Six respondents strongly agreed that the interface elements were designed well. Potential areas identified for modification included inclusion of a wider range of TBI samples across the recovery continuum (e.g., mild, early recovery). Respondents also demonstrated a strong indication that they would recommend the use of TBIBank Grand Rounds to colleagues.

**Conclusions:** TBIBank Grand Rounds is regarded as a valuable teaching resource by educators working in TBI internationally. The findings highlight the value and importance of an interactive resource and has identified areas of modification to effectively meet the needs of this core user group.

## Dementia awareness within Australia: What do people know and how willing are they to change?

Sharon Savage, Katherine Dorrington and Sarah Haskard

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**Background and Objectives:** Public knowledge regarding dementia is vitally important to reduce misconceptions and stigma, facilitate early diagnosis and treatment, and to reduce onset in up to 40% of cases by encouraging healthier lifestyle choices. Knowing your vulnerability towards future diagnosis may also be important in reducing dementia risk, yet it is unclear what Australians currently know and feel

about these issues. In particular, no studies have explored to what extent Australians would be willing to change their behaviour to reduce dementia risk, and at what age they believe this is important.

**Method:** A mixed methods design was conducted, involving an initial 10-minute online survey of 296 community-dwelling Australian adults (18-89 years), followed by 45-minute interviews in a subsample of participants. Respondents covered 7 of the 8 states and territories. The majority of participants were well-educated (44% educated to a tertiary level), women (59%), and had known someone with dementia (62%). Participants answered questions regarding dementia-related health belief attitudes (e.g. their perception of the severity of a dementia diagnosis, their personal sense of susceptibility), true/false knowledge questions regarding dementia symptoms and risk factors and provided ratings regarding both their interest in dementia screening and their willingness to change their behaviour to reduce their dementia risk.

**Results:** While dementia knowledge was poor (mean accuracy: 8.2 out of 16), the majority of respondents (83%) reported positive intentions towards dementia screening, with perceived benefits and dementia susceptibility as significant predictors. Majority (55%) believed that healthy lifestyle changes were already important at their age (by a mean age of 37 years), with willingness to change lifestyle predicted by dementia susceptibility and level of education.

**Conclusions:** Australian public knowledge of dementia remains poor. Encouragingly, Australians show positive attitudes towards learning of their own vulnerability to a future dementia diagnosis and in making changes to their lifestyle to reduce their risk of dementia onset. This indicates an urgent need to improve people's knowledge of dementia to facilitate their ability to make good lifestyle choices and reduce dementia risk.

## Post-diagnostic dementia care: A call for action

Michelle Kelly, Sharon Savage, Kylie Wales and Mariko Carey

University of Newcastle, Newcastle, NSW, Australia

**Synopsis of session:** This “how to” session will be an open discussion about how we improve post-diagnostic dementia care in Australia for people living in the community. It will commence with a discussion about current services provided, followed by a proposed service model and concluding with a critical discussion of this model.

While most research and provision of clinical services focus on the prevention and diagnosis of dementia, all of which is important, this “how to” will focus on the question ‘what next’. How do we support the person with dementia after diagnosis, and how do we support their families to live more fulfilling lives? This is so important as these support factors play a role in progression of disease and likelihood of placement in formal aged care settings. Maintaining the relationships and supports with family is crucial, and we will discuss where the focus of research and clinical service provision needs now shift. This session will be interactive, and we will welcome your input into how we do Dementia Care better in Australia.

**Learning objectives:** Participants will:

- Develop a broader understanding of dementia care, beyond diagnosis including the role of assessment in care.
- Increased awareness of evidence-based therapies and emerging evidence for care for people with dementia and their family carers.
- Develop an understanding of models of care in dementia.

## Improving access to acquired brain injury (ABI) rehabilitation services for Aboriginal clients

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State Head Injury Unit, Perth, Australia

**Background and Objectives:** The SHIU identified a gap in service through limited numbers of Aboriginal clients with ABI being referred for community rehabilitation. In 2020, liaison with NMHS Aboriginal Health Services identified that from January to June 2020, only 1 of 28 potentially eligible Aboriginal clients were referred to the SHIU. Identification of this gap has resulted in a collaborative approach with SHIU and Aboriginal Health to optimise outcomes for Aboriginal clients with ABI.

**Method:** The cause and extent of the problem was assessed through NMHS Aboriginal Health Project Officer conducting an audit of Aboriginal clients admitted to SCGH from January to June 2020 (6 month period) who would potentially meet SHIU eligibility criteria (16-65yrs of age; non-degenerative ABI - e.g. stroke, tumour, trauma, infection, hypoxia, severe concussion etc). Additionally, rehabilitation (inpatient; outpatient; community etc.) was not identified on many of the discharge plans as an ongoing service. From the above findings, Aboriginal Health and SHIU have worked collaboratively to develop a dedicated concise referral form for SCGH Aboriginal Liaison Officers; in addition to a culturally specific SHIU brochure. The SHIU Senior Clinical Coordinator together with an SCGH AHLO meet (where possible) with the client / family / carer whilst on the acute SCGH ward to introduce them to the service and facilitate engagement in rehabilitation; and to simplify the referral process making access to services easier.

The project also enabled evidence gathering for creation of ABI AHLO positions within the SHIU.

**Results:** Over a 6-month period (commencing 2/11/2020) SCGH AHLO referred 9 clients with 8 being eligible AND accepting services. In the 2021-2022 financial year (as access to wards restricted with Covid): 32 Aboriginal clients were admitted to the SHIU, 25 engaging with either SHIU or other short/ long term rehabilitation services. Employment of 0.5FTE Aboriginal Health Liaison Officer within SHIU commenced March 2022 – from the ECU Healing Right Way project.

**Conclusions:** Providing education to Aboriginal clients and their family / community about ABI and their support options to help return to community, early in their ABI journey, results in improved engagement with longer term rehabilitation and support services.

## Decolonising service provider responses to Indigenous mothers with TBI from family violence

Michelle Fitts<sup>1,2,3</sup>, Jennifer Cullen<sup>3,4,5</sup>, Yasmin Johnson<sup>1</sup>, Elaine Wills<sup>1</sup>, Gail Kingston<sup>6</sup> and Karen Soldatic<sup>1,7</sup>

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**Background and Objectives:** Given the widespread concern about the family violence epidemic in Australia, there has been growing attention on the impact of traumatic brain injury (TBI) secondary to violence for women. Previous TBI-related research has primarily focussed on non-Indigenous Australian experiences of disablement, and the models of care that can address such impacts. At present, there is little known about Aboriginal and Torres Strait Islander (Indigenous) women who experience violence-related

TBI. Using a decolonial feminist perspective, this study aims to understand the experiences of Indigenous women who engage with the health and broader service provider systems following this injury.

**Method:** Using purposeful sampling, Indigenous women (aged 18+) and service provider professionals including health, housing, legal and disability services as well as specialised family violence services were invited to participate in interviews and discussion groups. Between January and September 2022, 20 women and 80 service provider professionals participated from across one regional town (Queensland) and one remote town (Northern Territory). Audio recordings were transcribed verbatim. Written notes and transcripts were generated from each participant group and analysed separately using thematic analysis. The themes from the two groups were compared to determine areas of commonality and difference in relation to the focal research questions.

**Results:** Participants discussed how system responses blur the boundaries of responsibility and enforce a punitive response to Indigenous women who have recently acquired their disability through violence. Women experience stigmatisation due to the origin of their injury which further compound the racialisation of Australian health and disability care. Further, the inter-connection of disability and violence has detrimental effects for women including the undermining of womens' roles as mothers. Such experiences leave women to manage their own safety as they often feel compelled to disengage from service provider systems.

**Conclusion:** By reporting on the ways women are held responsible for the injuries caused by others, this study draws attention to government and non-government services and the policies that govern their responses to focus on empowering women to access the supports they need for themselves and their children as they navigate their life post-injury.

## “I don’t think it’s on anyone’s radar”: The workforce and system barriers to healthcare for Indigenous women following a head injury acquired through violence in remote Australia

Michelle Fitts<sup>1,2,3</sup>, Jennifer Cullen<sup>3,4,5</sup>, Gail Kingston<sup>6</sup>, Elaine Wills<sup>1</sup> and Karen Soldatic<sup>1,7</sup>

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**Background and Objectives:** Aboriginal and Torres Strait Islander women experience high rates of traumatic brain injury (TBI) as a result of violence. Healthcare access is critical for women who have experienced a TBI as it can support pre-screening, comprehensive diagnostic assessment and referral pathways for support. This study explored the workforce barriers that affect access to healthcare and assessment for a potential traumatic brain injury for Aboriginal and Torres Strait Islander women as an outcome of family violence in one remote region in Australia.

**Method:** Between January and July 2022, semi-structured interviews and discussion groups were conducted with 38 professionals from health, housing and disability services as well as specialised family violence and legal services from one remote town in the Northern Territory, Australia. Interviews and discussion groups were audiotaped and transcribed verbatim. Transcripts were analysed using thematic analysis.

**Results:** While service workers described high ‘suspected head injury’ among the clients they work with and support, very few women had been assessed for TBI. Various workforce barriers prevent pre-screening and assessment including limited access to specialist neuropsychology services and stable remote primary health care professionals with remote expertise. There were also low levels of training and knowledge among community-based service providers of TBI. While some service professionals were able to address some of the system barriers, lack of healthcare and assessment generated uncertainty for service providers about how to support and respond to their clients’ needs.

**Conclusions:** Needs-based investment in the primary healthcare and specialist service systems together with professional training on TBI would benefit how systems in remote areas respond through a more integrated approach to support women following family violence. There is a need for further research to understand how assessment, screening and follow-up care for Aboriginal and Torres Strait Islander women is best implemented into remote settings.

## ‘Hurry up and get me out of here’: Why are so many young people (still) stuck in residential aged care?

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**Background and Objectives:** Following the 2020 Royal Commission into Aged care, the Australian Government set a target for no-one under 65 years of age to be living in residential aged care (RAC) by 2025. Yet over 3000 younger people continue to live in RAC, and although some progress has been made, the target is unlikely to be met. This study aims to understand what is contributing to the slow rate of transition out of aged care.

**Method:** People living in RAC, aged 18-65, and nominated close others e.g., family member, allied health worker, were recruited to the study. This paper reports on preliminary findings from interviews with 5 primary participants and 3 close others. Primary participants were living with either an acquired brain injury or neurological disorder. Data analysis followed a grounded theory methodology consisting of initial line by line coding followed by focused coding of the interview transcripts, the identification of themes and sub-themes.

**Results:** Participants had moved into aged care because there was insufficient support at home. All became NDIS participants after entering RAC. Most expressed a need to move out of RAC to regain their independence, and all but one expressed a desire to live alone in their own unit. Barriers to achieving housing choices included delays in assessments, misrepresentation of their housing goals in their NDIS plan, shortage of appropriate individual housing in their local area, and difficulties exploring alternative housing.

**Conclusions:** Hundreds of individuals remain in RAC despite a strong desire to leave and despite government and NDIS policy. Young people in residential aged care (YPIRAC) need access to skilled transition navigators that are experts in disability, health and housing to enable them to leave RAC. Understanding specific barriers is critical to informing the development of this workforce as well as the other systems change needed to support young people to leave RAC.

## Do existing services in Victoria have the experience and expertise to meet the ongoing needs of young adults? A service mapping project

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**Background and Objectives:** Eighteen Australians aged 18-45 years have a stroke every day, and most report that rehabilitation and support services are disjointed, inappropriate or do not exist to meet their needs. This study aimed to identify and characterise existing services for young adults post-stroke in Victoria as part of a 5-year project that will establish a new Young Stroke Service (YSS).

**Method:** A systematic search was undertaken to identify relevant clinical, rehabilitation and allied health services. Sources included previous publications, the National Health Service Directory, professional association 'find a provider' listings, and the Stroke Foundation. A desktop audit and key informant interviews with clinical, management or administrative personnel were undertaken to collect information on service design and delivery characteristics; level of experience, confidence and willingness working with young stroke survivors; and information accessibility.

**Results:** 189 Victorian services from 80 organisations were included. Most were multidisciplinary services (81.0%) in public (68.3%) rehabilitation, community health or allied health settings. The most prevalent clinical disciplines were physiotherapy/exercise physiology (n = 162, 85.7%), occupational therapy (n = 139, 73.5%), speech pathology (n = 116, 61.4%), psychology/counselling (n = 102, 54.0%), and neuropsychology (n = 42, 22.2%). Fifty-seven services had a specific neurological rehabilitation team or program, and only 36.2% reported that most or all staff had received communication accessibility training. Most (71.7%) worked with less than five young adult stroke patients each year, and only 39.8% reported that their staff were "very" confident to work with young adults post-stroke, although 78.9% were "very" willing to work with them. Most services stated that young stroke patients would wait 1-4 weeks (31.5% of services) to access the service or that wait times would vary for different types of therapy (31.5%), with only 9.0% likely to see a patient within one week.

**Conclusions:** The findings reiterate that expert services for young adults post-stroke are lacking in Victoria. The service mapping research is ongoing, and the findings will be integrated into the new YSS digital platform to support timely collaborative care with, and referrals to, services that do have experience working with younger adults post-stroke in the community.

## Trajectories of Emotional Distress a Decade After Moderate-Severe Traumatic Brain Injury

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**Background and Objectives:** Emotional distress is often persistent after moderate-severe traumatic brain injury (TBI), highlighting the need for longitudinal research. Most previous studies have examined emotional distress only up to five years post-injury and as a single averaged trajectory, treating all individuals with TBI as belonging to the same homogenous group. We considered the chronic,

heterogenous, and dynamic nature of post-TBI emotional distress, characterising linear and non-linear patterns of emotional distress a decade after injury.

**Method:** 596 individuals with moderate-severe TBI completed the Hospital Anxiety and Depression Scale (HADS) at 1, 2, 3, 5, and 10 years post-injury. We examined trajectories of the 14 individual HADS symptoms. We also visually interpreted transitions of participants along a spectrum of emotional distress across time based on the HADS total score. Latent class analysis was used to identify distinct linear and non-linear trajectories of post-TBI emotional distress. Logistic regressions were performed to investigate personal and injury-related predictors of trajectories.

**Results:** There was overall mild emotional distress in the sample a decade post-injury. The most common HADS symptoms at each time-point were *feeling slowed down* and *restlessness*. Symptoms generally increased between 1 and 2 years post-injury; from 2 to 3 years, there was heterogeneity in symptom trajectories; and all symptoms improved between 5 and 10 years. Whilst the pattern of change was similar across symptoms in the total sample, individuals varied in their transitions along the spectrum of total emotional distress across time. Latent class analysis identified five distinct trajectories: ‘*Gradual Improving*’ (39%), ‘*Resilience*’ (36%), ‘*Gradual Worsening*’ (10%), and two non-linear trajectories of ‘*Worsening-Remitting*’ (8%) and ‘*Improving-Relapsing*’ (6%), with points of inflection occurring between 5 and 10 years. Middle age at injury, more severe TBI, comorbid spinal and limb injuries, and pre-injury mental health treatment were associated with earlier and/or worsening emotional distress.

**Conclusions:** Gradual improving and resilience trajectories of emotional distress predominated in this moderate-severe TBI cohort, although some showed gradual worsening or non-linear trajectories. Clinicians, funders, and service providers should respond to these dynamic needs, ensuring options for ongoing as well as responsive, episodic treatment.

## “I’m glad that they allowed me to learn that in my own way”: Understanding the impact of interactions with health professionals on adjustment after stroke

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**Background and Objectives:** Adjustment after stroke involves adapting to changed life circumstances and is influenced by a range of factors. Humanising care has received recent attention in the brain injury literature and is closely aligned with practices that support strong therapeutic relationships. The aim of this paper is to explore the influence of interactions with health professionals on processes involved in adjustment after stroke, with attention to approaches that are facilitative.

**Method:** A qualitative longitudinal approach was chosen to explore the dynamic lived experiences of people with stroke, their close others, and their rehabilitation clinicians. A total of 35 in-depth interviews were completed with 16 participants. Engagement with participants with stroke continued for approximately 12 months. Repeated interviewing supported the development of a relationship with the researcher and facilitated a recursive process of reflection and sense-making. Interview transcripts were coded using strategies consistent with constructivist grounded theory methods. Extensive field notes and coding memos were used to chart process and change through time.

**Results:** People with stroke and their close others described processes linked to adjusting and adapting to changed lives. Interactions with health professionals were significant in shaping their experience of stroke and had the potential to help or hinder their adjustment trajectories. Facilitative interactions were underpinned by two approaches: (a) being attuned to the experience of the person with stroke, and



(b) viewing recovery and adjustment as a living process. Clinicians who were guided by these approaches were able to understand drivers and motivations, facilitate experiences of self-efficacy, and anticipate future change processes. Over time there were opportunities to build knowledge of stroke through the experience of stroke symptoms, and for reflection on the meaning of stroke in the context of the person's life story. **Conclusions:** Experiences with health professionals contributed both positively and negatively to adjustment processes after stroke. Approaches consistent with humanising care, including recognition of the centrality of the person's lived experience of stroke, strengthened collaborative processes that supported adjustment. Clinicians who viewed recovery and adjustment as a living process remained open to future opportunities and progress and avoided limiting assumptions.

## Early parenting behaviour is associated with complex attention outcomes in middle to late childhood in children born very preterm

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**Background and Objectives:** Attention deficits are common in children born very preterm (VP), especially for children with higher social risk. The aim of this study was to examine the association between parenting behaviour and attention in children born VP, and whether this association is influenced by familial social risk.

**Method:** Two hundred and twenty-four children born < 30 weeks' gestation and/or with a birth weight < 1250 g were recruited at birth. At 2 years, social risk was calculated and parenting behaviours were observed during a parent-child interaction task, with children's attention skills assessed at 7 and 13 years using standardized assessments.

**Results:** Higher levels of sensitive parenting at 2 years were positively associated with divided attention at age 7 years, and higher levels of intrusive parenting were negatively associated with divided attention at 13 years. Children born VP with higher social risk were more positively influenced by sensitive parenting behaviour for sustained attention at 7 years, selective attention at 13 years, and divided attention at 7 and 13 years than children born VP with lower social risk. Additionally, children born VP with higher social risk were more negatively influenced by intrusive parenting for sustained attention outcomes at 7 years than those with lower social risk.

**Conclusions:** In summary, the evidence for a contribution of early parenting to attention outcomes in children born VP was stronger for more complex attention (divided attention) compared with basic attention domains. Our findings also suggest that early parenting behaviour has a particular influence on children born VP from socially disadvantaged environments for attention outcomes.

# Benefits and challenges of accessing psychosocial support for people with brain tumour and their family members: a qualitative inquiry of healthcare professionals' perspectives

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**Background and objectives:** Psychosocial support is an integral component of supportive care for people with brain tumour and their families. Little is known about psychosocial care pathways in Australia and how these vary according to individuals' brain tumour and social characteristics. We aimed to map psychosocial care pathways and explore variations in support from the perspectives of healthcare professionals.

**Method:** We conducted a qualitative study using semi-structured interviews with interdisciplinary healthcare professionals who regularly support people with brain tumour and their family members within hospital and community services. Interviews explored current scope of practice, the clinical referral pathways employed including access to psychological support, and factors influencing the level and type of psychosocial care offered. Interviews were recorded, transcribed and analysed thematically.

**Results:** 21 healthcare professionals (81% female) including psychologists (n = 7), nurses (n = 4), other allied health professionals (n = 4), oncologists (n = 3) and cancer community information and support staff (n = 3) from five Australian states or territories were interviewed. Interviews lasted on average 50 minutes (range: 33-89 minutes). Three themes were identified: 1) Benefits of long-term care coordination and interdisciplinary connections; 2) Challenges in fitting people into the care system; 3) Brain tumour affects the whole family but systems of support may not always reflect this. Although psychosocial care pathways were reported to be established, there was variability in their application due to issues accessing services. Support for individuals with lower-grade glioma and benign tumours was especially perceived as fragmented across the illness trajectory.

**Conclusions:** Findings highlight the need for improved access to care coordination and interdisciplinary psychosocial care tailored to the varying needs of individuals with brain tumour and their families.

## Use of olanzapine to treat agitation in traumatic brain injury: a series of n-of-one trials

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**Background and Objectives:** Agitation is common during post-traumatic amnesia (PTA) following traumatic brain injury (TBI) and is associated with risk of harm to patients and caregivers. Antipsychotics are frequently employed to manage agitation in early TBI recovery despite limited evidence to support their use. The sedating and cognitive side-effects of these agents may exacerbate confusion during PTA, leading to prolonged PTA duration and increased agitation. We conducted a double-blind, randomized, placebo-controlled trial investigating the efficacy of olanzapine for agitation management during PTA.

**Method:** Clinically agitated participants in PTA received oral olanzapine or placebo for the duration of PTA, beginning at a dose of 5mg/day and titrated to a maximum dose of 20mg/day. Data was analysed as an n-of-1 series. Group comparisons were also conducted, examining level of agitation, number of agitated days, agitation at discharge, duration and depth of PTA, length of hospitalisation, cognitive outcome, adverse events and rescue medication use.

**Results:** Eleven participants were recruited ( $n = 5$  olanzapine,  $n = 6$  placebo). Mean age was 39.82 years ( $SD = 20.06$ ) and mean time post injury 46.09 days ( $SD = 32.75$ ). A significant decrease in agitation with moderate to very large effect ( $\text{Tau-U effect size} = .37-.86$ ) was observed for three of five participants receiving olanzapine, while no significant reduction in agitation was observed for any participant receiving placebo. Effective dose ranged from 5-20mg. Response to treatment was characterised by lower level of agitation and response to treatment within 3 days. Participants receiving olanzapine demonstrated poorer orientation and memory during PTA with large effect size (olanzapine  $M = 9.32$ ,  $SD = 0.69$ ; placebo  $M = 10.68$ ,  $SD = 0.30$ ;  $p = .009$ ,  $d = -2.16$ ), and a trend toward longer PTA duration with large effect size (olanzapine  $M = 71.96$  days,  $SD = 20.31$ ; placebo  $M = 47.50$  days,  $SD = 11.27$ ;  $p = .072$ ,  $d = 1.26$ ).

**Conclusions:** Olanzapine can be effective in reducing agitation during PTA, but not universally so. Crucially, administration of olanzapine during PTA may lead to increased patient confusion, prolonging PTA. As such, olanzapine use should be minimised where possible. When considering use, clinicians must balance the advantages of agitation management with the possibility that the patient may never respond to the medication and may experience increased confusion, longer PTA and poorer outcomes.

## Pilot and feasibility study of a group therapy program for individuals with emotion dysregulation after an acquired brain injury

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**Background and Objectives:** Emotion regulation (the ability to modify the intensity or trajectory of an unfolding emotion to achieve a goal) is often compromised after an acquired brain injury (ABI) with

significant consequences, leading to intra and interpersonal difficulties and reduced functional capacity. It is considered, therefore, that emotion dysregulation is one of the most debilitating psychological consequences following an ABI. Current interventions are limited by a lack of theoretical grounding and failure to address key elements of the process of emotion regulation. We adapted an existing transdiagnostic manualised intervention program to the ABI population. The program is underpinned by the Extended Process Model of Emotion Regulation developed by James Gross and consists of 8, 2-hour sessions including meetings for carers. The goal of the present study was to evaluate said pilot intervention using quantitative and qualitative methods.

**Method:** A series of psychometrically robust emotional measures and functional recovery measures were used to quantitatively evaluate the outcome of the intervention, at baseline, mid and post intervention, and Follow-up. Further, a qualitative approach was used to evaluate the feasibility of the study as well as feedback from participants and facilitators to further develop the intervention in the future.

**Results:** Results show that participants improved in the area of emotion regulation, alexithymia, emotional reactivity, beliefs about emotions, and psychological wellbeing dimensions. Participants also reported positive changes in functional outcomes and reported high levels of satisfaction with the content and delivery the program.

**Conclusions:** The Extended Process Model of Emotion Regulation served as a good theoretical framework to enhance functional recovery of individuals with an ABI by improving emotion regulation abilities. Involving carers in the program appears beneficial. In this presentation we offer details of the content of the intervention and describe the results of each emotional dimension in detail and how these can be mapped onto the Extended Process Model.

## Abstracts for Posters

# Preliminary feasibility of the Capacity Assessment and Remediation Tool (CART)

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**Background and Objectives:** Frontline mental health workers often face a tension between duty of care and dignity of risk but have few resources to help them navigate this ethical dilemma. The Capacity Assessment and Remediation Tool (CART) was developed for this purpose and the aim of the current study was to determine preliminary feasibility of the CART.

**Method:** N = 8 frontline workers from a community-based mental health service were provided with training in use of the CART then asked to trial the tool with consumers of their service for a period of one month. At the end of the trial period, they were asked to complete an online feasibility questionnaire based on Bowen et al.'s (2009) criteria. Most questionnaire item response types were slider scales ranging from one extreme (e.g., 'not at all ...', scoring zero) to the other (e.g., 'very ...', scoring 100). Reverse items were adjusted, and the following descriptors were applied in interpreting the quantitative data: 0-25 = low, 26-50 = somewhat low, 51-75 = somewhat high, 76-100 = high.

**Results:** N = 6 (75%) participants responded to the online questionnaire. Acceptability ranged from somewhat high to high. Demand ranged from somewhat low to somewhat high. Implementation ranged from somewhat high to high and it took on average 13 minutes to administer and score the CART. Practicality ranged from somewhat low to somewhat high. Adaptation ranged from somewhat high to high. Integration was somewhat high. Expansion ranged from somewhat high to high. Limited efficacy was somewhat high.

**Conclusions:** The majority of feasibility domains were rated as somewhat high to high. Feedback from this preliminary study will be used to refine the tool, particularly with respect to improving feasibility in the demand and practicality domains.

## The social-ABI-lity pilot study - using an online training program and a private Facebook group to support safe use of social media for connection after brain injury

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**Background and Objectives:** Social media may offer an important way for people with an acquired brain injury (ABI) to connect meaningfully with others. However, it can be challenging for people with ABI to use social media due to changes in their cognition and communication skills, and rehabilitation clinicians can be concerned about risks associated with social media use. A 2022 scoping review identified no interventions designed to support safe and successful social media use after ABI. To address this gap, the social-ABI-lity program was developed. This study aimed to investigate the outcomes of completing social-ABI-lity alongside supported practice in a peer group using a real-life social media platform.

**Methods:** A mixed-methods, pre-post intervention design was used to evaluate a multicomponent social media communication skills intervention. Participants completed a short, self-guided course about social media (social-ABI-lity program), and then participated in a private, moderated Facebook group over a 12-week period (social-ABI-lity Facebook group). Data was collected on social media knowledge, use, and quality of life at pre-intervention, post-intervention, and 3 months post-intervention. Descriptive analysis was conducted for participant characteristics and social media use, knowledge, and engagement. Statistical analysis was used to compare measures for quality of life and reported ratings of frequency, confidence, and enjoyability of Facebook use. Qualitative content analysis was conducted on post-intervention interview data.

**Results:** 17 adults with an ABI were recruited between April and September 2021, with 16 participants completing the 12-week intervention. At post-intervention, there were significant improvements in confidence in using Facebook ( $p = .002$ ) and enjoyment of using Facebook to connect with others ( $p = .013$ ). Although there was no significant change in reported quality of life, participants reported multiple benefits from the intervention.

**Conclusions:** With the increasing use of social media, there is growing responsibility to address social media communication skills in ABI rehabilitation. The multicomponent social-ABI-lity intervention is the first of its kind and this pilot study provided preliminary evidence that this intervention improved outcomes for people with ABI. Future implementation studies should investigate embedding peer moderators within groups and taking an individualised approach to intervention delivery.

# The use of vision training technology following Acquired Brain Injury: Rehabilitation approaches, user experiences, and functional outcomes

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**Background and Objectives:** Vision changes are common following Acquired Brain Injury (ABI). Vision Coach™ is an interactive lightboard used within a Victorian-based ABI rehabilitation service, as an Australian first. This research had four objectives:

1. Outline Vision Coach™ interventions using The Template for Intervention Description and Replication (TIDieR) checklist
2. Undertake retrospective exploratory analyses of ABI patient treatment and outcomes using Vision Coach™
3. Examine user experience of the technology; and
4. Detail expansion of Vision Coach™ in ABI rehabilitation, including concussion.

**Method:** A mixed methods exploratory design was used. The TIDieR checklist was applied to document Vision Coach™ interventions. Outcomes of two adults with visual field deficits who underwent Vision Coach™ training were investigated via retrospective data analyses of medical files, and Vision Coach™ data. Treatment provided, and changes in Vision Coach™ scores, across component-based vision training tasks were examined. Seven adults with ABI who had used Vision Coach™ completed two published measures of technology user experience, and semi-structured interviews. Quantitative data were reported descriptively. Interviews were transcribed verbatim and thematically analysed.

**Results:** Vision Coach™ tasks including visual recognition; reaction-time; divided attention; and central peripheral were all used in treatment. Patients had documented improvements in recognition and reaction tasks, aligning with Vision Coach™ normative data scores. User experience measures demonstrated positive psychosocial outcomes, and high levels of satisfaction with the training.

**Conclusions:** This research provides first available evidence regarding use, patient experiences and outcomes of Vision Coach™ in ABI rehabilitation and offers directions for future vision rehabilitation research.

# Agitation during early recovery after traumatic brain injury: The family perspective

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**Background and Objectives:** Approximately 44% of individuals exhibit agitation during the early recovery period after traumatic brain injury (TBI), commonly referred to as post-traumatic amnesia (PTA). Agitation can impede recovery and poses a significant management challenge for healthcare services.

As families provide significant support for their injured relatives during this time, this study aimed to explore the family's experience during PTA to better understand their role in agitation management.

**Method:** There were 20 qualitative semi-structured interviews conducted with 24 family members of patients exhibiting agitation during early TBI recovery (75% female, aged 30-71 years), predominantly parents (n = 12), spouses (n = 7) and children (n = 3). The interviews explored the family's experience of supporting their relative exhibiting agitation during PTA.

**Results:** The interviews were analysed using reflexive thematic analysis, which revealed four key themes: the importance of family involvement in care, the value of a therapeutic environment, receiving sufficient information and having their support needs addressed.

**Conclusions:** This study emphasised the significant role of families in managing agitation during early TBI recovery and highlighted that families who are well-informed and well-supported have the potential to minimise their relative's agitation during PTA, which may reduce the burden on healthcare staff and promote patient recovery.

## Internet and technology access and use amongst individuals with acquired brain injury: A scoping review

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**Background and Objectives:** Mainstream information and communication technologies (ICTs) are being increasingly integrated into health and rehabilitation programs to improve access to care and client outcomes. While personal access and use of the internet and ICTs has typically been high across the general population, individuals with cognitive disabilities have reported relatively poorer access and use of these technologies, a phenomenon referred to as digital divide. To date, there have been no scoping reviews published to map the available literature exploring aspects of digital divide for individuals with an acquired brain injury (ABI). The aim of this scoping review was to map and report on the published literature describing internet and ICT access and use amongst individuals with an ABI.

**Method:** A scoping review was conducted using the Joanna Briggs Institute (JBI) methodology. A systematic search of CINAHL, Embase, MEDLINE, Web of Science, Google Scholar, and APA PsycINFO was undertaken for studies published between 2001 and 2022. Relevant grey literature, including dissertation theses, government and non-government organisation reports and data was searched via advanced Google searches. Two authors independently reviewed studies against eligibility and extracted relevant data.

**Results:** The review identified a total of 9126 results, 56 of which were identified as relating to technology access and use and screened at full-text level. A total of 7 articles relating to technology access and 23 articles relating to technology use were included in the final scoping review. The sources reported on technology access and/or use for stroke (n = 11), traumatic brain injury (n = 8), or mixed ABI (n = 5) samples and indicate that as ICTs have become more accessible, they are serving a range of practical, social, leisure, and rehabilitation uses, however degree of use is varied and influenced by a broad range of factors, both injury and non-injury specific.

**Conclusions:** With gaps in internet access closing, individuals with ABI are engaging with ICTs, allowing for greater independence, participation and inclusion. Addressing a range of barriers including, but extending beyond, injury-related factors, is likely to reduce digital divide further and enhance personal and health outcomes.

# Examining the shift in demographics and clinical characteristics of patients with traumatic brain injury: Implications for interventions?

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**Background:** Traumatic brain injury (TBI) is a leading cause of global disability. Evidence suggests that there has been a recent shift in TBI demographics characterised by an increase in the age at which TBI is sustained. Falls now represent the leading mechanism of brain injury in developed countries, followed by motor vehicle accidents (James et al., 2019; Pozzato et al., 2019; Roozenbeek et al., 2013). Factors such as age, gender, mechanism of injury and injury severity significantly influence prognosis and intervention techniques post-TBI and need to be well understood.

**Objectives:** To document the demographics and clinical characteristics of TBI patients admitted to a tertiary hospital and determine any recent changes in those characteristics.

**Method:** A retrospective cohort study was conducted at a tertiary hospital in Sydney. All patients presenting with a diagnosis of TBI between February 2021 and September 2022 were included for analyses. Data collected included age at the time of injury, gender, mechanism of injury (falls, transport accidents, assaults or other) and injury severity. Injury severity was classified using Diagnostic and Statistical Manual-5 (DSM-5) criteria. TBI patients were stratified into the following age groups: 15-29 years; 30-44 years; 45-59 years; 60-74 years; and 75+ years for calculation of age-specific incidence.

**Results:** The sample included 187 patients aged between 16 and 93 years ( $M = 55.49$ ,  $SD = 22.02$ ). The ratio of males to females was 2:1. The highest number of TBI cases were recorded in the elderly age group (75+ years; 24.60%), followed closely by the 60-74 year age group (24.06%) and then the 45-59 year age group (20.32%). The lowest TBI incidence was in the 30-44 year age group (12.83 %). Overall, falls were the leading mechanism of injury (59.89%), followed by transport accidents (30.48%) and assaults (4.81%). Falls represented the primary cause of injury in the young age group (15-29 years; 44.12%) and elderly group (84.78%). Mild TBIs accounted for 43.85% of this population, while 38.50% presented with a severe TBI and 17.65% presented with a moderate TBI.

**Conclusions:** Results revealed a shift to the elderly age groups as being more likely to experience a TBI and that falls were the leading mechanism of injury. The findings suggested a need to reassess the target population recruited for research and to supplement current approaches towards prevention of TBI and age-appropriate interventions post-TBI.

## State Head Injury Unit: a client-centred community rehabilitation pathway

Miffy Durham and Rose Blight

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**Background and Objectives:** Acquired Brain Injury encompasses a broad range of diagnoses with varying levels of functional impact. As a consequence, whilst care for people following acquired brain injury follows broad clinical practice guidelines, an individualised approach to service provision is critical.



**Method:** This poster will outline the flexible model of service delivery that has been developed and implemented by the State Head Injury Unit in Western Australia, to cater for the community reintegration needs of clients aged 16-65 years referred to the service.

**Results:** Clients referred to the State Head Injury Unit are triaged based on severity and recency of injury into case coordination and therapy streams. This allows for rehabilitation programs to be tailored to the needs of the individual client through utilising the State Head Injury Unit case coordination and therapy services, as well as accessing wider community resources where shared care is most appropriate. In addition, services are adapted to cater for rural and remote clients. This poster will focus on the typical journey for a client with acquired brain injury, through a comprehensive registration.

**Conclusions:** Acquired Brain Injury rehabilitation is provided through a flexible model of service delivery to optimise outcomes for clients with a diverse range of presentations.

## A systematic review of self-concept change in Multiple Sclerosis

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**Background and Objectives:** Self-concept is increasingly being acknowledged as an important predictor of outcomes in those with neurological illnesses. The notion of self-concept and its relevance to people with multiple sclerosis (MS) is poorly understood, notably the consequential shift in self-concept due to disease progression and disease-related events. The current study systematically reviewed and synthesised quantitative and qualitative studies investigating self-concept in MS to identify studies reporting on self-concept measurement, self-concept change, and the impact of major disease-related events on self-concept.

**Method:** PsycINFO, MEDLINE (PubMed), CINAHL, Scopus, and Web of Science were systematically searched, with the Mixed Methods Appraisal Tool (MMAT) and Consolidated Criteria for Reporting Qualitative Research (COREQ) used to appraise the quality of the identified articles. A total of 30 studies (11 quantitative, 19 qualitative) were identified.

**Results:** Results from quantitative studies suggest that MS may be responsible for some degree of self-concept change following diagnosis and throughout the disease course. A noticeable limitation of this literature however is the lack of a standardised (and MS-specific) assessment of self-concept. The results from qualitative studies illustrate the complex process of self-concept change that may be involved in people with MS, and that are catalysed by MS-related events (e.g., work withdrawal).

**Conclusion:** These findings highlight the need for future research to examine the nature of changing self-concept more thoroughly in MS and the need for a standardised tool to measure self-concept change that is relevant for MS populations.

## Relationship discontinuity among caregiving partners followed by an acquired brain injury

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**Synopsis of session:** Relationship difficulties are common after brain injury and have a major impact on outcomes such as quality of life. Despite this, there is little evidence about how best to help couples maintain good relationships. Research suggests that a major contributor to these difficulties may be the fact

that, although some caregiving partners experience their current relationship as a continuation of the loving relationship they shared before the brain injury, for many the pre-injury relationship has been lost, and replaced with a relationship that feels very different (Yasmin & Riley, 2021). The aim of this poster is to provide an understanding of what relationship discontinuity/ continuity is, its components (within the context of acquired brain injury), factors affecting the perception of discontinuity, and how best we can support the caregiving partners to develop a greater sense of continuity post-injury.

## Intersectorial approaches to preventing adverse police incidents for people with acquired brain injury in the community: A pilot of the Acquired Brain Injury Consent Document for Emergency Services (ABCDE) Service initiative

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**Background and Objectives:** Cognitive, communication and behaviour changes are common after acquired brain injury (ABI), often leading to adverse interactions with emergency services. There has been limited research exploring ways to support these interactions. The Acquired Brain Injury Consent Document for Emergency Services (ABCDE) is a staged intersectorial service initiative developed by the Acquired Brain Injury Outreach Service (ABIOS) to acknowledge an ABI and provide specific strategies to assist interactions with emergency services. The initial pilot focuses on improving interactions between consumers with ABI and the Queensland Police Service (QPS).

**Method:** ABCDE adopted the Queensland Health (QH) QI cycle (Plan, Implement, Evaluate, Re-Assess). Planning involved exploring adverse interactions between people with ABI and QPS where ABIOS had provided advocacy on an ad hoc basis. Formal QH Morbidity and Mortality reviews were also assessed. Standardising communication to enhance information sharing was considered appropriate. Discussions were initiated with a local QPS and stakeholder consultation (rehabilitation staff, ABIOS, QPS and consumers) was used to inform the development of documentation and processes that were endorsed by QPS and QH legal services. As part of implementation, education of stakeholders (QPS and QH) was used to assist referrals. Active recruitment for a pilot QI activity with QPS was commenced in September 2021.

**Results:** Resources (ABCDE form, staff/consumer information sheets, revocation form) were developed and approved by both sectors. Adoption of a formalised process occurred within both QPS (QPRIME) and QH (ieMR) whereby the ABCDE document is scanned into the consumer record in both systems. As part of implementation, 20 consumers with ABI have consented and registered with the QPS. Initial critical incident evaluation involving QPS interaction has resulted in the proposed development of an ABCDE ID card that participants could use to alert QPS to their participation.

**Conclusions:** The importance of intersectorial communication/sharing of health information between QH and QPS to reduce the incidence of adverse interactions for people with ABI living in the community has been highlighted by this project within its first quality improvement cycle. Plans are in place for amendments to documentation and process as part of the QI cycle. A plan exists to expand the project to include other emergency services.

## Understanding the experience of people with post-traumatic brain injury fatigue and the secondary impact on their caregivers

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**Background and Objectives:** Fatigue following traumatic brain injury (TBI) is a subjective experience. It is described as tiredness that does not necessarily get better with rest, making normal activities difficult. It is therefore likely that fatigue has a secondary impact on caregivers. The purpose of this research is to develop an understanding of the experience and support needs of people with fatigue following TBI and that of their caregivers in the first 2 years following injury across the domains of (i) patient and carer dyads; (ii) the patient group; (iii) the caregiver group.

**Method:** Participants consisted of 15 patients with TBI who reported fatigue and their 15 caregivers who attended an outpatient Brain Injury Clinic at a metropolitan hospital. Patients were not eligible to participate if they had had a previous TBI or past chronic medical condition that may have already influenced fatigue. Patient participants completed two questionnaires (Global Fatigue Index [GFI], Fatigue Scale for Motor and Cognitive Functions [FSMC]) and caregivers (GFI – rating themselves and rating the patient) to describe fatigue across two time-points. Seven patient/caregiver pairs consented to recorded interviews to further explore their experience of fatigue through thematic analysis.

**Results:** On the FSMC 80% of patient participants rated their fatigue as moderate to severe at the first time-point. Themes from the interviews include patients reported their fatigue to be a source of frustration that limits their ability to do the tasks they want to and need to do each day and that they struggle to manage the balance of resting and activity participation. Caregiver ratings of patients' fatigue on the GFI tended towards more severe ratings for 53% of participants compared to patient self-ratings, while all caregivers rated their own fatigue levels on the GFI as moderate to severe. Caregivers reported that they struggle to know what to do to support the person with fatigue. Caregivers are also frustrated and worried at the increase in their actual or perceived workload which contributes to feelings of tiredness, their loss or change in roles, and impact on the family unit.

**Conclusions:** Patients with post TBI fatigue and their caregivers indicated moderate to severe levels of fatigue in the first 18 months following injury and highlighted the impact, their experiences, and support needs.

## Clinician Perspectives on the Usability and Acceptability of Project HOPE: A Family-Led, Video-Based, Peer Support Resource for Families affected by Paediatric Acquired Brain Injury

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**Background and Objectives:** Families of children with acquired brain injuries (ABI) often experience acute and long-term challenges, including distress, anxiety, and changes in family functioning. During

rehabilitation, families often desire opportunities to connect with peers who have shared similar experiences. However, such opportunities are often unavailable. Heads Together Online Peer Education (HOPE) is an online, video-based peer support resource developed by families with lived experience of ABI in collaboration with clinicians and researchers. HOPE aims to provide information, hope, and support to families in the early stages post-ABI. While understanding families' perspectives of HOPE's usability is crucial, engaging rehabilitation clinicians in this process is important to support implementation.

This study is part of an iterative knowledge translation program aiming to develop and implement HOPE for families impacted by paediatric ABI in Australia. In this study, we aimed to understand clinicians' perspectives of the usability and acceptability of HOPE.

**Method:** Clinicians from a state-wide interdisciplinary rehabilitation service were invited to participate using purposive sampling. Participants accessed the HOPE website over 4-6 weeks and completed the System Usability Scale and participated in a semi-structured interview at follow-up. Interview transcripts were analysed using inductive content analysis.

**Results:** Thirteen clinicians from a range of discipline backgrounds and levels of paediatric ABI rehabilitation experience (range 1-30 years) participated. Participants rated the website's usability as 'good' (mean: 81.7/100.0). All participants found the delivery format engaging and the content relevant to the families they work with. Participants shared that they would recommend HOPE to families, but that the decision to introduce HOPE should be made in consultation with the interdisciplinary rehabilitation team, and taking into account factors including timing post-injury, rehabilitation stage, and psychosocial factors including family adjustment.

**Conclusions:** This study provides preliminary support for the usability and acceptability of HOPE at a state-wide paediatric rehabilitation service from the perspective of clinicians. Further investigation is required to explore the resource's usability and acceptability with families in the early stages post-ABI, as well as its efficacy in improving family outcomes.

## Measurement Equivalence of the English and Chinese Versions of Montreal Cognitive Assessment (MoCA) in America

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**Background and Objectives:** While the neuropsychological battery of the Uniform Data Set was revised to the third version (UDSNB 3.0; Weintraub et al., 2018), the Montreal Cognitive Assessment (MoCA; Nasreddine et al., 2012) was chosen as a measure of overall cognitive impairment. As the proportion of Americans with diverse racial, ethnicity and language is increasing, the battery and MoCA had been translated to different language versions for wide usage across populations. However, there is growing awareness that equivalence in construct measurement across language versions cannot be assumed (Tuokko et al., 2009). Thus, we aim to examine whether the Chinese version of MoCA is equivalent in the measurement scores to the English version.

**Method:** This study involves participants who completed the English or Chinese version of MoCA (part of the UDSNB 3.0) in the National Alzheimer's Coordinating Centre (NACC) dataset. The diagnosis was captured, including Normal Cognition, Mild Cognitive Impairment and Dementia. Scores of 54 participants who completed the Chinese version of MoCA were compared with 216 random samples who completed the English version and matched by diagnosis. Adjusted score-difference between the 2

language versions is computed using multiple linear regression, with the adjustment of age, sex, years of education, CDR sum of boxes, NPI-Q total score and diagnosis. The 2 language versions are considered to have equivalent scores if the 90% confidence interval of adjusted score-difference fall within the equivalence margin. A priori, we defined the equivalence margin as one-half of the standard deviation (0.5 SD) of MoCA, given that one-half of SD often defines the minimally important clinical significance in the literature (Sloan et al., 2005).

**Results:** The participants had a mean age of 69.4 (9.2), years of education of 15.4 (3.1) and MoCA score of 22.64 (6.28). In the adjusted model, the score difference for the MoCA was -0.48 (90% CI -1.54 to 0.57). The 90% CI for the adjusted score-differences fell within our predefined margins of equivalence (0.5 SD) and indicated equivalence of the scores.

**Conclusions:** We will be the first to demonstrate the equivalence of total scores between the Chinese and English versions of MoCA in the NACC database. The empirical evidence of the measurement equivalence supported the use of the Chinese version of the MoCA with comparable psychometric properties to the English version in clinical and research contexts.

## Implementation of an early discharge program for inpatients in tail-end post-traumatic amnesia.

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**Background and Objectives:** Symptoms common with post-traumatic amnesia (PTA; memory impairments, confusion, aggression, disrupted sleep, and agitation) can make management of a patient in PTA challenging. Therefore, it is common practice for discharge home from acute trauma to be delayed until a person has emerged from PTA. Bed pressures as well as reduced hospital visitation experienced during the COVID-19 pandemic led our trauma team to explore whether patients in tail-end PTA are able to be supported within newer, home-based rehabilitation programs in Melbourne. The objectives of this implementation project were to (i) develop resources and education content to support earlier discharge of inpatients in tail-end PTA, and (ii) evaluate the impact of implementation.

**Method:** Participatory action research was used to generate clinical resources to support the changed. Using Plan-Do-Study-Act (PDSA) cycles, single cases of patients scoring >11 on Westmead PTA Scale were used to study implementation in practice. Mixed methods were used to explore changes in service delivery and understand the confidence of family-members and community services to support patients in PTA once discharged home.

**Results:** Resources to support clinical reasoning and discharge planning preparation were developed alongside carer-specific education to support preparedness for discharge. Results across six PDSA cycles suggested challenges include community-service acceptance of referrals of patients in PTA, family member confidence to recognise deterioration, and clinician knowledge of how to assess PTA emergence without sole reliance on WPTAS. No adverse events were experienced.

**Conclusions:** Inpatients with traumatic brain injury were discharged prior to emergence from PTA with the support of a clinical reasoning, education and community support program.

# A preliminary investigation of the association of sleep with salivary biomarkers, rehabilitation dose of therapy and functional performance after stroke

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**Background and Objectives:** It is estimated that as many as 78% of stroke survivors experience a sleep disorder that interferes with everyday function. Given the known link between sleep and recovery after stroke, understanding the relationship between the rehabilitation experience in the hospital environment and neuroplasticity may provide insight into how to promote recovery. This feasibility study aimed to describe the factors and potential associations between motor performance and therapy participation, fatigue, stress, and sleep.

**Method:** A cross-sectional study was undertaken in the inpatient rehabilitation setting with adult stroke survivors who were clinically receiving upper limb motor training. Therapy session duration and frequencies were recorded prior to assessing sleep quality and amount over one night. Participants rated their perceived fatigue and sleep quality, and overnight nursing documentation of sleep was extracted from the medical record. Motor performance was assessed on the Box and Block Test and grip strength, while saliva samples were taken to assess cortisol and melatonin hormone expression as measures of stress and sleep, as well as brain derived neurotrophic factor (BDNF) expression as a measure of neuroplasticity. All data were collected across a 24-hour period.

**Results:** N = 18 participants participated (age  $72 \pm 10$  years) at a mean  $\pm$  SD  $31 \pm 22$  days post-stroke and  $21 \pm 21$  days since admission to rehabilitation. Participants received motor training  $10 \pm 2$  times per week, and sessions were  $54 \pm 8$  mins in length. Mean  $\pm$  SD sleep duration was  $9.6 \pm 2.1$  hours with  $1.1 \pm 0.7$  hours awake-time during the night. All participants reported fatigue, with mean Fatigue Severity Scale 37 (SD 15) and identified issues with respect to getting to sleep as well as quality of sleep. Saliva cortisol expression was negatively correlated with motor performance and BDNF expression, while melatonin expression was positively correlated with perceived fatigue and negatively correlated with motor performance. All data were feasible to collect, however COVID restrictions and bed-numbers influenced recruitment rate.

**Conclusions:** Findings provide key feasibility data to better understand targetable factors to optimise the rehabilitation experience, neuroplasticity and motor recovery after stroke.

# An Immersive Virtual Reality Game Identifies Atypical Attentional Patterns, Such as Spatial Neglect, Within a Diverse Sample of People with Brain Injury

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**Background and Objectives:** The project aimed to develop a new tool in neurocognitive assessment for visuo-spatial neglect. Neglect is often underdiagnosed and poorly treated, resulting in long term disability. The project presents a virtual reality (VR) assessment approach, the 'Attention Atlas', which maps three-dimensional attention in neglect patients. It also aimed to provide clinically relevant visual outputs.

**Methods:** Patients completed traditional pen-paper tests for neglect (clock drawing, line cancellation and letter cancellation) and the VR game. The game involved patients finding targets (L's) amongst distractors (T's) in levels of increasing difficulty. The research compared traditional pen-paper assessments with The Attention Atlas game on several metrics including spatial attention, reaction time, and accuracy. Attention maps were created by tracking eye-gaze, controller, and head set movement. We also measured for acceptability in this patient sample through motion sickness and gaming experience surveys.

**Results:** Healthy controls and patients all reported minimum to zero motion sickness and high levels of enjoyment and usability. Various analyses, including outlier analysis, indicated the Attention Atlas was able to identify spatial biases in patients, and that it may be more sensitive than traditional pen-paper for identifying neglect behaviour. The Attention Atlas also identified patients with non-lateralised spatial biases through accuracy and reaction time. Attention maps were a visually effective way to present a patients spatial attention strengths and weakness to clinicians.

**Conclusions:** The Attention Atlas was enjoyable and low-risk to patients. The Atlas identified patients with lateralised and non-lateralised attention problems. It may be useful for more subtle cases of neglect that pen-paper methods are not sensitive to, but that have significant impact on functional day-to-day activities. A visual, clinically relevant map of a patient's spatial attention can be generated in near-time. Overall, there are significant implications for the assessment and rehabilitation of patients with brain injury. The Attention Atlas game forms part of a new generation of translational neuroscience exploiting the latest advances in technology for effective assessment and rehabilitation.

## Pet Therapy in Action

Amanda English and Audrey McCarry

Royal Rehab, Sydney, Australia

Following TBI, our clients' express feelings of loss, grief and adjustment to injury. This can directly impact mood, motivation, connection and communication. Through ongoing observation on the brain injury unit, it has been noted that the presence of two Labrador assistant-trained dogs has had a positive impact. Clients report greater engagement, feelings of joy and the confidence to fully engage and participate in their individual rehabilitation goals. In this poster presentation, we explore from a multidisciplinary team perspective how we can assist clients to achieve the best possible outcomes, through the utilisation of pet therapy.

## “Know Everything, Be Everything”: Skills, Attributes and Challenges for Effective Support Coordination in the National Disability Insurance Scheme

Sharyn McDonald<sup>1,2,3</sup>, Lee Cubis<sup>1,2</sup>, Di Winkler<sup>1,2</sup> and Jacinta Douglas<sup>1,2</sup>

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**Background and Objectives:** Support coordinators play a crucial role in assisting National Disability Insurance Scheme (NDIS) participants to understand their funding plans and connect with housing and disability supports. For people with complex needs, the role of the support coordinator can involve navigation of hospital, housing and/or disability support sectors requiring specialised skills. Currently, there is a dearth of literature highlighting the qualities exhibited by successful support coordinators and the resources required for them to work effectively. This study aimed to identify the skills and attributes of a good support coordinator from the perspectives of support coordinators, allied health professionals and NDIS participants with neurological disability. A secondary aim was to identify factors that helped and hindered the delivery of effective support coordination services.

**Method:** Support coordinators ( $n = 14$ ), allied health professionals ( $n = 14$ ) and NDIS participants ( $n = 7$ ) completed semi-structured interviews exploring their lived experiences of support coordination. NVivo12 was used to collate data and key themes were identified through thematic analysis.

**Results:** Three major themes emerged. The first theme depicted the importance of collaboration and accessibility, good interpersonal skills, disability and NDIS knowledge and getting to know the individual with disability. The second theme was characterised by the challenges facing the support coordination workforce including unclear and unrealistic expectations, communication with the NDIS, unpaid labour and burnout. The third theme described opportunities for strengthening the capacity of the support coordination workforce through continual learning, role clarity, supervision and engagement with professional networks.

**Conclusions:** Support coordinators face considerable individual and systemic barriers to effectively supporting people with neurological disability and complex needs to maximise the benefits from their NDIS plans. Implementation of clear roles and responsibilities, standardised training, support and supervision and a blueprint for good practice may allow the profession to be more effective and increase the availability of good support coordinators.



## Development and preliminary validation of a culturally sensitive cognitive screen for Aboriginal and/or Torres Strait Islander Peoples: The Guddi Way Screen

Michelle McIntyre<sup>1,2</sup>, Caoilfionn Turner, Kylie Rixon<sup>1</sup> and Jennifer Cullen<sup>1,2</sup>

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**Background:** First Peoples in Australia experience increased risk of acquired brain injury (ABI) and associated cognitive impairments through high exposure to risk factors such as violence, substance misuse, head trauma, chronic illness, and foetal alcohol spectrum disorder (FASD). Despite these higher risks, culturally appropriate tools 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. Moreover, assessments conducted using culturally inappropriate methods can be invalid and harmful when people do not feel safe. This paper reports on the development and preliminary validation of a cognitive screen for Aboriginal and/or Torres Strait Islander Peoples.

**Method:** The Guddi Way screen is a culturally developed cognitive screen and interview protocol to identify possible cognitive impairments and psychosocial disability in First Peoples in Australia. The screen includes tasks relating to cognition and mental functions across multiple cognitive domains including orientation, verbal communication, memory, praxis, visuospatial skills, executive function, and attention and concentration.

Phase 1: Review of literature and preliminary work: piloting and consultation

Phase 2: Development of cognitive screen and Cultural protocol.

Phase 3: Stakeholder focus groups: cultural and expert review

Phase 4: Refinement, review, and validation

**Results:** Preliminary testing indicates that the screen is sensitive to brain injury and cognitive impairment.

**Conclusions:** The Guddi Way Screen shows promise as a culturally validated engagement and screening process to identify cognitive impairment.

## Using the Mayo-Portland Adaptability Index to evaluate acquired brain injury rehabilitation services

Miffy Durham, Rose Blight and Rachael Mumme

WA Health, North Metropolitan Health Service Mental Health and Public Health, State Head Injury Unit

**Background and Objectives:** The State Head Injury Unit (SHIU) has been using the Mayo Portland Adaptability Index (MPAI-4) to evaluate client functioning. The questionnaire is completed by Case Coordinators at the client's admission to and discharge from the service. The MPAI-4 aids the clinical evaluation of people with ABI during the post-acute period, as well as the evaluation of rehabilitation programs. While the SHIU regularly uses the MPAI-4 in an individual client focused manner, the results have not yet been used in the broader evaluation of the SHIU rehabilitation program. This investigation, therefore, sought to use existing MPAI-4 data to explore service level changes in client functioning during admission to the SHIU rehabilitation program.

**Method:** Archival MPAI-4 data from 1987 – 2020 was extracted and analysed. This included examination of change statistics between MPAI-4 scores at admission and MPAI-4 scores at discharge. This was

completed across the three MPAI-4 sub-scales of ability, adjustment, and participation. Additionally, mean change scores were compared to established MPAI-4 clinical significance thresholds (i.e., a 5-point difference in T scores represents minimal clinically important difference whilst a 9-point difference in T scores is thought to represent robust clinically important differences).

**Results:** The MPAI-4 scores of approximately 2500 clients were available for analysis. There were no additional inclusion criteria imposed beyond that of service eligibility (i.e., adults between ages 16 – 65 years who have obtained an ABI). Examination of mean T-scores revealed lower scores at discharge across all three subscales. Lower scores indicate improved client function. Non-parametric t-tests revealed these differences were statistically significant across ability ( $z = 28.722, 1484, p < .001$ ), adjustment ( $z = 34.945, 1586, p < .001$ ), and participation ( $z = 35.353, 2214, p < .001$ ). Mean change scores met criteria for robust clinically important differences with a 9-point reduction in ability, 11-point reduction in adjustment, and an 11-point reduction in participation.

**Conclusions:** Clients with an ABI showed a statistically and clinically significant improvement in functioning while engaged with the SHIU rehabilitation program.

## Recovery after Severe Traumatic Brain Injury: Return to Life and Work as a Physiotherapist

Ché Phillips

Person with lived experience

**Synopsis:** 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.

## Drinking Motives and Neurocognition in Alcohol Use

Lara R. Piccoli, Lucy Albertella, Erynn Christensen, Murat Yücel and Rico S.C. Lee

BrainPark, Turner Institute for Brain and Mental Health, School of Psychological Sciences and Monash Biomedical Imaging Facility, Monash University, Melbourne, Australia

**Background and Objectives:** Neurocognitive dysfunction plays a significant role in predicting alcohol use. There is limited research investigating how drinking motives interact with neurocognition in alcohol use. This study aims to investigate the associations between drinking motives and neurocognition in people who identified as engaging in risky drinking.

**Method:** This cross-sectional study forms part of a larger longitudinal project investigating the neurocognitive predictors of addictive behaviours. Participants completed the Habit, Reward, and Fear Scale (HRFS) to assess reward-driven; relief-driven; and habit-driven drinking motives, and five cognitive tasks from the novel BrainPAC app (the Stop Signal Task, Balloon Analogue Risk Task, Value-Modulated Attentional Capture & Reversal Task, Delay Discounting Task, Double Bandit Task) to assess neurocognition. Preliminary analyses were conducted on the  $N = 49$  participants recruited thus far. Individuals were aged between 18 and 57 years (25 males;  $M$  age = 33.69,  $SD = 10.19$ ), and endorsed alcohol use as their primary addictive behaviour of concern.

**Results:** Multiple linear regression analyses adjusting for age and sex revealed that relief drinking was significantly positively associated with an inability to inhibit natural, automatic responses ( $\beta = .514$ ,  $p = .038$ ) and that habit drinking was associated with greater persistence (i.e., inflexibility) of attentional capture by reward cues ( $\beta = .435$ ,  $p = .083$ ).

**Conclusion:** Individuals who predominantly drink out of habit were shown to have poorer cognitive flexibility, whilst those who predominantly drink to cope with negative emotions, such as distress, were shown to have poorer cognitive inhibition. Understanding these associations between neurocognitive dysfunction and drinking motives will allow us to determine who is most susceptible to risky drinking, helping to inform the development of more targeted and personalised interventions.

## Using an Action Research Methodology to Develop a Rapid Response Service Supporting People with Neurological Disability to Discharge Home from Hospital

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**Background and Objectives:** Young people with neurological disability are at risk of lengthy delays to hospital discharge with negative consequences for hospitals and individuals. The National Disability Insurance Scheme (NDIS) in Australia provides housing and support opportunities for this population; however, timely navigation of the hospital, housing and NDIS interfaces is crucial for effective hospital discharge. The aim of this study was to evaluate a rapid response Hospital to Home (HTH) service that was developed at the beginning of the COVID-19 pandemic. HTH worked with hospital clinicians and support coordinators to support people with neurological disability and complex needs who are stuck in hospital to discharge with appropriate housing and supports.

**Method:** An action research framework was embedded into HTH at its inception to make data driven changes to service processes in real time. This included qualitative interviews with stakeholders and the extraction of administrative data detailing demographic and disability variables, components of the HTH

intervention, housing and support needs and preferences of people stuck in hospital and outcomes such as identification of housing options and successful hospital discharge.

**Results:** Administrative data for 119 hospital inpatients with acquired brain injury (n = 49), spinal cord injury (n = 9), other neurological disability (n = 37) and intellectual disability (n = 24) referred to HTH between 2020 and 2022 were extracted. The main barriers to discharge to interim housing options were lack of NDIS funding in core supports for medium term accommodation (33%) and lack of suitable interim housing that met the persons accessibility needs (27%). For discharge to long-term housing options, the main barriers were lack of NDIS funding for specialist disability accommodation (SDA; 45%) and support workers (26%), as well as a lack of suitable long-term housing options that met accessibility needs (22%). HTH conducted interim and long-term housing searches for people with disability with a suitable interim housing option identified for 33 people, and a long-term housing option for 63 people. The most common long-term housing option was High Physical Support SDA (35%)

**Conclusions:** Involving a specialised service for navigating the hospital, housing and disability interfaces can help young people with disability identify interim and long-term housing options needed to discharge from hospital.

## Protocol for a targeted, interdisciplinary intervention for chronic persisting post-concussion symptoms among children and adolescents

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**Background and Objectives:** Paediatric concussion is estimated to result in four million Emergency Department presentations globally each year. Following a concussion, approximately 30% of children and adolescents will experience persisting post-concussion symptoms (pPCS) for more than four weeks. Chronic pPCS, lasting greater than three months post-injury, can have significant consequences on school and sport participation, academic and extracurricular activities, and social relationships. There is limited high-quality research on interventions to treat chronic problems following paediatric concussion. Emerging biopsychosocial conceptualisations of pPCS, coupled with the heterogeneity of pPCS profiles, warrant targeted, interdisciplinary approaches to treatment. The Concussion Essentials Plus Study builds on existing multimodal pPCS intervention research, to deliver a program adapted to treat chronic problems following paediatric concussion.

**Method:** A 12-week interdisciplinary intervention, with flexible module delivery designed to target a child's specific pPCS, is comprised of three key modules: (i) psychoeducation, providing concussion education and evidence-based strategies to support return to school/activity and treat common PCS; (ii) physiotherapy, treating vestibular, ocular-motor, cervical, and autonomic dysfunction; and (iii) psychology, using principles of Acceptance and Commitment Therapy with the aim to improve psychological flexibility, which has been hypothesised as a potential mechanism involved in the development or maintenance of pPCS. Pre- and post-intervention assessments examine physical, cognitive, and mental health functioning, of which feedback is provided to families.

**Results:** The intervention protocol, an explanation of key components, and preliminary results will be presented.

**Conclusions:** The protocol and treatment approaches described will provide direction for allied health clinicians working with young people who have pPCS lasting greater than 3-months post-injury. Findings from this research will help to inform best practice care for this clinical population.

## SLPs experiences of a counselling education program (CLEAR) for supporting psychological wellbeing in post-stroke aphasia: Results of a nested qualitative study

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**Background and Objectives:** Speech-language pathologists (SLPs) have a role in supporting psychological wellbeing as part of a multidisciplinary team in post-stroke aphasia and require appropriate training for providing psychological care. SLPs have limited and variable counselling education during pre-qualification training. In our recent trial (n = 49), a novel counselling education program, CLEAR, (CounSELLing Education in Aphasia Rehabilitation) was found to be feasible and demonstrated preliminary efficacy on SLPs' confidence and self-rated competency for supporting psychological wellbeing in people with aphasia and their families. In order to recommend wide scale implementation of the program, information about user experience and usefulness of the program for clinical practice is needed. In this nested qualitative study, we aimed to explore SLPs' (n = 6) experience of the education program and their opinions of the program's usefulness and applicability in post-stroke aphasia rehabilitation.

**Method:** A research associate not involved with the feasibility trial conducted semi structured interviews with volunteer participants (n = 6) who had completed the counselling education program. Interviews were conducted over the phone or videoconference and occurred within 2 months of program completion. Audio recorded data were transcribed verbatim and analysed using Framework Analysis.

**Results:** All participants would recommend the program to SLP colleagues. Although content, duration and the online format were acceptable for improving confidence in counselling for psychological care in post-stroke aphasia, improvements for interactivity and engagement of content in the learning module (Moodle) were recommended. Barriers and enablers to applying the counselling education into clinical practice in post-stroke aphasia rehabilitation are reported.

**Conclusion:** The results of this study support the preliminary efficacy and feasibility of the CLEAR program. Design improvements are required in future iterations of the program. The CLEAR program addressed a gap for professional education for SLPs to support psychological wellbeing in post-stroke aphasia rehabilitation.

## Modulating chronic outcomes after pediatric traumatic brain injury in a rodent model: Distinct effects of social and environmental enrichment

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**Background and Objectives:** Impairments in social and cognitive function are common, often debilitating issues for survivors of traumatic brain injury (TBI) during childhood. While poorly evaluated or understood to date, rehabilitation strategies may promote a post-injury setting that is supportive of behavioral recovery. We hypothesized that the social environment would be sufficient to modulate long-term outcomes in young mice after experimental TBI. This was compared to a typical environmental enrichment (EE) paradigm incorporating sensory, motor and cognitive stimuli.

**Method:** Male C57Bl/6J mice received a moderately-severe TBI or sham surgery at postnatal day 21. Mice were randomised to different social conditions (minimal socialisation,  $n = 2/\text{cage}$ ; or social grouping,  $n = 6/\text{cage}$ ), and different housing conditions (standard cage, or EE). Objects in EE cages were changed twice weekly to ensure novelty. After 8 weeks, all mice underwent extensive neurobehavioral testing to assess sensorimotor, social and cognitive outcomes.

**Results:** TBI mice exhibited hyperactivity, spatial memory deficits, altered anxiety-like behavior, reduced sensorimotor performance, and reduced social behaviours compared to age-matched uninjured controls. Typical EE increased sensorimotor performance and sociosexual interactions, while social housing reduced social and sociosexual investigation post-TBI. Social housing was also found to promote neurogenesis to protect against hippocampal tissue atrophy and spatial memory deficits. Few interactions were observed between typical EE and social housing, suggesting that these variables influence outcomes via distinct mechanisms.

**Conclusions:** Our findings indicate that specific manipulations of the post-injury environment can influence chronic outcomes after early life TBI, improving our understanding of modifiable factors that may be harnessed to promote optimal long-term recovery for survivors.

## Social Disinhibition in Acquired Brain Injury and Neurological Disease: A Concept Analysis

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**Background and objectives:** Social disinhibition is becoming increasingly recognised in the neuropsychological literature as a complex and debilitating sequelae associated with acquired frontal lobe damage. Despite this, the term has been inconsistently defined and described in both clinical and research contexts. The purpose of this paper was to explore and examine the concept of social disinhibition in the context of brain injury and other organic neurological conditions.

**Method:** A literature search for articles published in the English language from journal inception to June 2021 was conducted using MEDLINE, PsycInfo, Embase, CINAHL and Web of Science. A ‘concept analysis’ was conducted on the identified literature using Walker and Avant’s (2019) framework.

**Results:** The analysis suggested that while several terms are often used interchangeably with social disinhibition, including impulsivity and behavioural dysregulation, these terms may be differentiated and defined separately within the broader domain of ‘behaviours of concern’. Attributes, antecedents and consequences of social disinhibition were also identified and discussed.

**Conclusions:** Clarifying the concept of social disinhibition has important implications in both clinical and research contexts, including increased understanding of the behaviours, more accurate estimates of incidence and prevalence, and the development and implementation of targeted rehabilitation programs.

## Towards improving the predictive accuracy of the Test of Premorbid Functioning (TOPF): Development of a hybrid word reading task

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**Background and objectives:** Estimation of premorbid intellectual functioning is important in assessing the severity of acquired cognitive impairment. The accuracy of these estimates is critical to diagnostic decision making and understanding treatment outcomes. Previous research on the Test of Premorbid Functioning (TOPF) demonstrated poorer accuracy in Australian samples than in US standardisation studies. We aimed to develop a word reading task with greater accuracy than the TOPF within a sample of Australian adults, by incorporating words from the Wechsler Test of Adult Reading (WTAR) and National Adult Reading Test (NART).

**Method:** The sample included 145 healthy Australians aged between 18 and 70. Rasch analysis was used to select the hybrid wordlist items. Multiple regression analysis was used to create predictive models of intellectual functioning, as measured by the Wechsler Abbreviated Scales of Intelligence (WASI II).

**Results:** The Wright map of the selected 70-word items showed some gaps and redundancies remained across the IQ distribution. Comparison showed little overall improvement in variance explained by the hybrid wordlist. Inclusion of basic demographics provided a modest improvement. The hybrid wordlist demonstrated slightly greater predictive accuracy compared with previous Australian TOPF research.

**Conclusions:** These results showed only a small improvement in accuracy in models predicting FSIQ by this hybrid word list. This is likely to be due to significant gaps where there were no words to discriminate ability. It is recommended that additional word items are identified to better cover the full distribution of FSIQ scores in an Australian sample.

# Outcomes of interdisciplinary goal planning in early transitional ABI rehabilitation

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**Background and Objectives:** A transitional community rehabilitation service for adults with severe ABI in Queensland (ABI-TRS) has undertaken a series of quality activities to ensure best-practice goal setting and rehabilitation planning. This included: implementing interdisciplinary rehabilitation goal setting and different goal setting approaches (traditional, values-based, lifestyle mapping, hybrid model) to maximise engagement and best meet client needs; evaluating staff views of goal setting approaches; and evaluating clients' perception of client-centredness of goal planning.

Formal research has demonstrated clients make significant clinical gains across a range of areas following ABI-TRS rehabilitation. Whether clients are achieving their individual goals has not been formally evaluated as a cohort. It was hypothesized that client goal achievement would be high, following the quality activities undertaken above and clinical gains demonstrated on program.

**Method:** This project occurred within a service reporting and quality improvement framework. Client goal data were collated from the electronic medical record via a clinical chart audit, for clients discharged over a 12 month period (FY 21-22; n = 98). Data were deidentified, collated and examined using descriptive statistics.

**Results:** (i) Goal setting: 96.94% of clients participated in patient-centred goal setting. Reason for non-participation was self-discharge shortly after admission. Clients set up to 5 interdisciplinary goals for their ABI-TRS program; median = 3; mean = 2.85. Across the cohort, 279 goals were set. (ii) Goal achievement: Goals were rated as fully achieved (75.62%, n = 211), partially achieved (17.92%), not achieved (3.58%) or discontinued (2.87%). Factors impacting goal achievement included: level of goal set (e.g., stretch goal), client engagement, health factors / re-hospitalisation and non-rehabilitation factors.

**Conclusion:** The majority of clients' fully achieved their goals during ABI-TRS rehabilitation. The high levels of goal achievement are likely positively influenced by established goal setting processes and practices.