

**Neuropsychological Rehabilitation Special
Interest Group of the WFNR**

**19th Conference in Maastricht, The Netherlands
Online (livestream) and on demand for 90 days**

**Wednesday 12
Thursday 13
October 2022
HYBRID
(F2F, Stream &
on-demand)**



**19th Conference of the NEUROPSYCHOLOGICAL REHABILITATION SPECIAL
INTEREST GROUP OF THE WFNR (NR-SIG-WFNR)**

Maastricht, The Netherlands

Wednesday 12th and Thursday 13th October 2022

In conjunction with

**Autumn conference of the Nederlandse Vereniging voor Neuropsychologie
and NIP sectie Neuropsychologie**

Friday 14th October 2022

Sponsor:



**Australasian Society
for the Study of
Brain Impairment**

Conference Programme at a glance – WEDNESDAY 12th OCTOBER

Time	What is happening
8.00	Arrival, Registration and Find out where to hang posters
9.00	<p>Welcome by Convenor: Prof Caroline van Heugten</p> <p>Prof Robyn Tate (NR-SIG-WFNR committee chair): Opening Address: <i>Treatment fidelity in neurorehabilitation research and clinical practice</i></p> <p>Session 1: Virtual Oral Presentations Chair: Jon Evans</p>
9.30	Sarah Carrier - <i>Managing Agitation During Early Recovery Following Traumatic Brain Injury: Qualitative Interviews with Clinicians</i>
9.45	Jacinta Douglas - <i>Outcomes of a Multi-component Community Connection program (M-ComConnect) for people with severe traumatic brain injury (TBI)</i>
10.00	Dana Wong - <i>Integrated cognitive and psychological interventions improve meaningful outcomes after acquired brain injury (ABI): A systematic review and meta-analysis</i>
10.15	Q&A
10.30-11.00	Morning tea
11.00-12:30	<p>Session 2: Virtual Oral Presentations and datablitz Chair: Ashok Jansari</p>
11.00	Kate Gould - <i>“This group... I felt like I was medicating myself from this cyberscam illness that was living with me”. A qualitative evaluation of co-designing cybersafety training resources with and for people with acquired brain injury</i>
11.15	Joana O Pinto - <i>Proposal of a Common Terminology for the Neuropsychological Rehabilitation</i>
11.30	Cecilia Law - <i>Lives Shadowed by Losses: The Story of Patients with Accelerated Long-term Forgetting and Their Family</i>
11.45	Q&A
12.00	<p>Datablitz Amber Ayton: <i>The utility of the Cognitive Reserve Index questionnaire in chronic traumatic brain injury (Datablitz 1)</i></p>
12.05	Lee Cubis: <i>One Size Does Not Fit All: A qualitative investigation into the housing needs and preferences of people with Huntington’s Disease (Datablitz 2)</i>
12.10	Kate Gould: <i>An international transdisciplinary training program for allied therapy students in Positive Behaviour Support: Findings from a pre-post feasibility study (Datablitz 3)</i>
12.15	Georgina Mann: <i>Predictors of Quality of Life in Post-Acute Neurorehabilitation for Adults with Acquired Brain Injury (Datablitz 4)</i>

12.20	Megan Topping: <i>Recommendations for allied health professionals helping disability support workers to deliver best practice from the perspective of adults with acquired neurological disability</i> (Datablitz 5)
12.30– 14.00	Lunchtime & Poster Session
14.00– 15:30	Session 3: Oral Presentations and datablitz Chair: Fleur Domensino
14.00	(V) Nicholas Behn - <i>Telehealth administration of discourse measures: A comparison of traumatic brain injury and matched controls</i>
14.15	Ashok Jansari - <i>Towards an internationally-adapted new assessment of rapid forgetting for possible early detection of dementia</i>
14.30	Amy Abelmann - <i>Measuring Compensatory Strategy-Use Related to Slowed Information Processing Speed: A Validity and Reliability Study of the Virtual Meeting Task</i>
14.45	Q&A
15.00	Datablitz Mai Alharthy: <i>The Validation of the Arabic Version of the Rivermead Behavioural Memory Test Third edition RBMT-3 for Use with Acquired Brain Injury Population</i> (Datablitz 6)
15.05	Sara Da Silva Ramos: <i>A new initiative to raise awareness and knowledge of the neurobehavioural approach to rehabilitation</i> (Datablitz 7)
15.10	(V) Rosie Exell: <i>Dating and romantic relationships for adults with brain injuries, learning disabilities or autistic spectrum disorders: What is the research for supportive interventions?</i> (Datablitz 8)
15.15	Katherine Jackson: <i>Patient Reported Experiences of Using Community Rehabilitation and support services for people with Long Term Neurological Conditions: A Quantitative Systematic Review</i> (Datablitz 9)
15.20	Ashok Jansari: <i>Remote tele-assessment of executive functions: Adapting the Jansari assessment of Executive Functions, JEF©</i> (Datablitz 10)
15.25	Ellen Janssen: <i>Prevalence of posttraumatic stress disorder after stroke: A systematic review</i> (Datablitz 11)
15.30- 16.00	Afternoon tea
16.00- 17.45	Session 4: Oral Presentations Chair: Jennie Ponsford
16.00	Sanne Böing - <i>Eye-tracking in innovative neuropsychological assessment of visual working memory</i>
16.15	Fleur Domensino - <i>Exploring the potential of a minimal dataset for adults with acquired brain injury: A cross-sectional comparison of patient characteristics across healthcare settings</i>
16.30	Jonathan Evans: <i>The Scottish Memory Aid Survey: What Memory Aids are Recommended for People With Dementia or MCI?</i>
16.45	Q&A

17.00	Nikita Frankenmolen: <i>The effect of a short add-on sleep intervention in the rehabilitation of individuals with Acquired Brain Injury: A randomized controlled trial</i>
17.15	Irene Huenges Wajer: <i>Sensory Hypersensitivity after Acquired Brain Injury: from a Patient's Perspective</i>
17.30	Teuni ten Brink: <i>Objective assessment of visuospatial neglect using pupillometry</i>
17.45	Q&A
18.00	Close Day 1
19.00	Conference Dinner

THURSDAY

Time	What is happening
8.30	Arrival, Registration and Find out where to hang posters
9.00	NR-SIG-WFNR business meeting
10.00	Session 5: Virtual Oral Presentations Chair: Caroline van Heugten
10.00	Jack Nguyen: <i>Evaluating Interdisciplinary Rehabilitation for Concussion Recovery (iRECOVer), a 12-week treatment for persistent post-concussion symptoms: A single-case experimental design</i>
10.15	Tamara Ownworth: <i>Evaluation of the Telehealth Making Sense of Brain Tumour program for people with primary brain tumour: A randomised controlled trial</i>
10.30	Shannon Scarff: <i>Implementation of the Multiple Errands Test: A Knowledge Translation Approach</i>
10.45	Q&A
11.00-11.30	Morning tea
11.30-12.30	Session 6: Datablitz Chair: Irene Huenges Wajer
11.30	Leanne Rowlands: <i>"We can all relate": Participants' experience of an emotion-oriented group intervention for ABI (Datablitz 12)</i>
11.35	Ernest Tyburski: <i>Assessment of executive functions in patients with schizophrenia and patients with substance use disorders using a virtual reality task - Jansari assessment of Executive Functions (JEF©) (Datablitz 13)</i>
11.40	Fleur van der Feen: <i>Neurovisual rehabilitation care for visual complaints in people with multiple sclerosis (Datablitz 14)</i>
11.45	Pauline van Gils: <i>The Montreal Cognitive Assessment is a valid cognitive screening tool for cardiac arrest survivors (Datablitz 15)</i>
11.50	Elise Verhoog: <i>The Feasibility of a Gamified Compensatory Goal Management Training for Brain Injured Individuals (Datablitz 16)</i>

11.55	(V) Chelsea Walden: <i>What's in the Black Box of Rehabilitation? Towards an Intervention Taxonomy: a Mixed-Methods Study Within a Child Neurorehabilitation Service</i> (Datablitz 17)
12.00	Jessica Fish: <i>An evaluation of whether robotic and smart technology care interventions for people with dementia adhere to recommendations for good psychological care</i> (Datablitz 18)
12.05	Jessica Fish: <i>Standardising and validating the Cleveland Verbal Working Memory Test with Interference (CVWMT-I)</i> (Datablitz 19)
12.10	Johanne Rauwenhoff: <i>Acceptance and Commitment Therapy (ACT) is feasible for people with acquired brain injury: A process evaluation of the BrainACT treatment</i> (Datablitz 20)
12.15	Christine Resch: <i>Baseline levels of executive functions are associated with improvements in these domains after computerized repeated practice with strategy use instruction for children with acquired brain injury</i> (Datablitz 21)
12.20	Alexandra Rose: <i>A values based approach to goal setting in patients with severe acquired brain injury</i> (Datablitz 22)
12.30-14.00	Lunchtime & Poster Session
	Session 7: Oral Presentations and datablitz Chair: Jessica Fish
14.00	Simona Klinkhammer: <i>Are hospitalized COVID-19 patients in need of neuropsychological rehabilitation?</i>
14.15	Marilien Marzolla: <i>Sensory Hypersensitivity after Mild Traumatic Brain Injury – A longitudinal study investigating the course of hypersensitivity and its predictive value on long-term outcomes</i>
14.30	(V) Anna Adlam: <i>Evaluating Brief Behavioural Activation for depression in adolescents with acquired brain injury using a single-case experimental design</i>
14.45	Q&A
	Datablitz
15.00	Paul Skirrow: <i>Cognitive assessment in Aotearoa New Zealand: Patterns of practice and cultural validity of measures</i> (Datablitz 23)
15.05	Anneke Terneusen: <i>How can self-awareness in the general population improve neuropsychological rehabilitation?</i> (Datablitz 24)
15.10	Hella Thielen: <i>Assessing sensory sensitivity after acquired brain injury: the Multi-modal Evaluation of Sensory Sensitivity (MESSY)</i> (Datablitz 25)
15.15	Jessica Whyte: <i>Developing psychological wellbeing support for patients with Parkinson's disease: A qualitative study of patients' preferences and barriers to participation</i> (Datablitz 26)
15.20	Jessica Whyte: <i>Psychosocial group interventions for wellbeing in Parkinson's disease: A systematic review</i> (Datablitz 27)
15.30-16.00	Afternoon tea

	Session 8: Oral Presentations Chair: Christine Resch
16.00	Marilien Marzolla: <i>Insights into the experience and triggers of sensory hypersensitivity after acquired brain injury</i>
16.15	Iris van der Lijn: <i>Prevalence and nature of self-reported visual complaints in people with Parkinson's disease - Use of the Screening Visual Complaints questionnaire</i>
16.30	Ieke Winkens: <i>Short-term effects of non-confrontational feedback on self-awareness of deficits, motivation and participation during cognitive rehabilitation after brain injury</i>
16.45	Rosie Exell: <i>Rehabilitation for dating skills following Traumatic Brain Injury: What are the current practices and beliefs of healthcare professionals?</i>
17.00	Q&A
17.15-17.30	Wrapping up & next conference – Prof Robyn Tate
17.30	Close Conference – Prof Caroline van Heugten

ELECTRONIC POSTER SESSION 1

POSTERS – highlighted in yellow have not confirmed

Poster	First Name	Last Name	Submission Title
1	Louise	Birkett-Swan	Post-Diagnostic Support Groups for People with Young Onset Dementia – the need for specialist services
2	Louise	Birkett-Swan	The impact of a Memory Support Social Group at improving quality of life, positive outlook, friendship, belonging and functional ability in individuals with dementia and their carer
3	Jessica	Bruijfel	Subjective fatigue is associated with cognitive performance in people with traumatic brain injury
4	Sharon	Buckland	Coping after acquired brain injury: Insights from interpretative phenomenological analysis of dyadic case studies and the influence of changes to coping styles on family adjustment.
5	Fleur	Budde	The Efficacy of Errorless Learning and Goal Management Training in Parkinson's Disease, GoMaP Study
6	Stephanie	Casey	Using the Health Belief Model to explore factors that impact adherence behaviour in parents and teachers after child concussion
7	Stephanie	Casey	Psychological Interventions for Children Following Concussion: A Systematic Review
8	Chara	Chatzisavva	Key themes of identity intervention for young people following a brain injury
9	Catherine	Doogan	Carer's Count
10	Andreia	Geraldo	Exploring the efficacy of Remote Neurocognitive Rehabilitation in a case study of Acquired Brain Injury
11	Hannah	Gullo	Validation of Addenbrooke's Cognitive Examination – III for Administration Via Telehealth
12	Matthew	Jamieson	AppReminders – A pilot feasibility randomised controlled trial of a memory aid app for people with acquired brain injury
13	Ellen	Janssen	Treatment of posttraumatic stress symptoms with EMDR in a patient with aphasia after stroke: A case report
14	Erik	Oudman	Smartwatch reminders effectively aid prospective memory in Korsakoff's syndrome
15	Mirjam	van Dam	Health problems and care needs in patients with Korsakoff's janssensyndrome: a systematic review
16	Marco	Mion	Patient involvement in the design of an interventional psycho-educational group aimed at improving outcomes for survivors of sudden cardiac arrest
17	Emma	O'Connor	Using the cognitive-behavioural model to explore emotional adjustment after encephalitis as told through podcasts in the public domain: A qualitative study
18	Jose Maria	Porto-Payan	Cognitive flexibility: Trail Making Test and Five Digit Test equivalence.
19	Sandra	Rakers	Mental fatigue after traumatic brain injury: different determinants across the severity spectrum
20	Sophie	Rijnen	Current practice and views of Dutch speech pathologists regarding friendships after brain injury
21	Sandra	Rivas Garcia	Improving relationships with others: A single case study
22	Alexandra	Rose	The assessment of low mood, distress and depression in people with very severe brain injury: a survey of UK clinicians
23	Ana Rita	Silva	Evaluation of a tablet-based cognitive training program in a patient with bilateral thalamic ischemic stroke
24	Sonja	Soeterik	Too hard to assess?: Complex cognitive assessment using the right toe.
25	Pauline	van Gils	Brain Outcome After Cardiac Arrest- Single Case Experimental Design Intervention Study

26	Marjon	Westerhof-Evers	Emotion perception in traumatic brain injury: an exploratory eye tracking study
27	Leona	Wolters	Effectiveness of interventions addressing social connection and isolation for people with acquired brain injury: a systematic review
28	Leona	Wolters	"My connections are stronger with people": A grounded theory exploration of stakeholder perspectives on successful social connection after acquired brain injury (ABI)
29	Stephanie	Wright	Employing a positive behaviour support approach on a Neuro-behavioural ward: an audit of patient demographics and outcomes
30	Stephanie	Wright	Audit of Positive Behaviour Support Plans against recent Court of Protection Guidance

ELECTRONIC DATABLITZ POSTER SESSION

Amber Ayton: *The utility of the Cognitive Reserve Index questionnaire in chronic traumatic brain injury* (Datablitz 1)

Lee Cubis: *One Size Does Not Fit All: A qualitative investigation into the housing needs and preferences of people with Huntington's Disease* (Datablitz 2)

Kate Gould: *An international transdisciplinary training program for allied therapy students in Positive Behaviour Support: Findings from a pre-post feasibility study* (Datablitz 3)

Georgina Mann: *Predictors of Quality of Life in Post-Acute Neurorehabilitation for Adults with Acquired Brain Injury* (Datablitz 4)

Megan Topping: *Recommendations for allied health professionals helping disability support workers to deliver best practice from the perspective of adults with acquired neurological disability* (Datablitz 5)

Mai Alharthy: *The Validation of the Arabic Version of the Rivermead Behavioural Memory Test Third edition RBMT-3 for Use with Acquired Brain Injury Population* (Datablitz 6)

Sara Da Silva Ramos: *A new initiative to raise awareness and knowledge of the neurobehavioural approach to rehabilitation* (Datablitz 7)

Rosie Exell: *Dating and romantic relationships for adults with brain injuries, learning disabilities or autistic spectrum disorders: What is the research for supportive interventions?* (Datablitz 8)

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Session 1

Managing Agitation During Early Recovery Following Traumatic Brain Injury: Qualitative Interviews with Clinicians

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Background and Objective: Agitated behaviours pose a significant challenge during the early stages of recovery following traumatic brain injury (TBI). The aim of this study was to gain a deeper understanding of how clinicians around the world manage post-TBI agitation. It is important that we understand the factors that influence how clinicians manage agitation to help inform the use of consistent and effective management strategies for reducing agitation in TBI care.

Method: Using a qualitative design, interviews were conducted with 33 clinicians (58% female, aged 23-71 years) from 16 countries who had experience in working with agitated patients. A semi-structured interview schedule was used to explore the experiences and approaches used by clinicians to manage agitation during early TBI recovery.

Results: Interviews were transcribed and analysed using reflexive thematic analysis. The central theme of the clinician interviews was the effective management of agitation, of which there were three key sub-themes: managing the safety of staff and patients as a priority, identifying and reducing triggers for agitation and implementing behavioural principles for managing agitation. There were two overarching factors that influenced the effective management of agitation: clinician-related factors, such as teamwork and developing rapport, and systemic factors, such as training and experience, and resource availability.

Conclusions: This study highlighted key approaches for the effective management of agitation during early TBI recovery as described by clinicians working with these patients worldwide. Clinicians shared a similar perspective on what constitutes effective agitation management, however, there were differences in implementation across settings due to several key challenges. Future areas of focus for improving agitation management should include ongoing clinician training and support, consistent measurement of agitated behaviours and further evidence-based research involving effective interventions for managing agitation during early TBI recovery.

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Outcomes of a Multi-component Community Connection program (M-ComConnect) for people with severe traumatic brain injury (TBI)

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Background and Objectives: Nearly two thirds of adults with severe TBI have ongoing difficulties developing and maintaining community connections. They report having few if any friends and having little social or community involvement. Although the problem is well documented, attempts to develop effective interventions to improve community connection have seen relatively little success. The aim of this project was to implement and evaluate an innovative treatment to support social activity and community connection for people with severe TBI.

Method: M-ComConnect is an individualised intervention with the key objectives of increasing social activity in the community. M-ComConnect was delivered on 25 occasions in varying contexts with adults with severe TBI (> 2yrs post-injury). A mixed method longitudinal design was used to evaluate the feasibility and acceptability of the program. Core measures included Health-related

Quality of Life (HR-QOL), Wellbeing and Community Integration (CI) administered at 5 timepoints: pre-intervention, post-intervention (2-4 wks after intervention) and 3 follow-ups at 3-, 6- and 9-12 ms post-intervention. Paired sample *t*-tests and effect size were used to evaluate the impact of the intervention. Post-intervention semi-structured interviews were transcribed verbatim and analysed using thematic analysis (Braun & Clarke, 2009).

Results: Statistically significant changes post-intervention with large positive effects were demonstrated on QOL, wellbeing and CI and maintained over time. Thematic analysis of interview transcripts revealed that participants' experience of M-ComConnect clustered around themes of receiving support, building skill, connecting and belonging, developing confidence and seeing a different future.

Conclusion: These findings provide support for the clinical utility, feasibility and effectiveness of M-ComConnect. Support workers who worked with participants were able to work effectively within the program to support the person in new and ongoing community activities. The results demonstrate that M-ComConnect is a promising intervention to facilitate change in QOL, wellbeing and CI with broader implications for building a positive sense of self for people living with the consequences of severe TBI. Further systematic evaluation of this program, which can be tailored and applied to meet the needs and preferences of each individual is warranted.

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Integrated cognitive and psychological interventions improve meaningful outcomes after acquired brain injury (ABI): A systematic review and meta-analysis

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Background: Cognitive and emotional difficulties that limit meaningful participation are common post-ABI. Interventions evaluated in clinical trials are usually highly targeted, focusing on specific impairments in cognition or mood. Though these interventions can be effective at the impairment level, they do not always translate to improved activity and participation outcomes, perhaps due to the complex reciprocal relationship between cognition and emotion. Integrated treatment approaches are increasingly popular, but it is unclear if they produce superior outcomes. We aimed to conduct the first systematic literature review and meta-analysis evaluating the efficacy of integrated cognitive and psychological interventions for improving activity, participation, quality of life and impairment after ABI.

Method: A comprehensive search strategy of five databases was collaboratively developed. Inclusion criteria were randomised controlled trials; adults with a clinical diagnosis of non-progressive ABI at least one month post-injury; and non-pharmacological interventions integrating cognitive and psychological components compared to any control (active, treatment as usual or waitlist). Eligibility for inclusion and data extraction were evaluated by two independent reviewers using a standardised protocol. Effect sizes were calculated using Hedge's *g* and estimated using a random effects model. Risk of bias was assessed using the PEDro-P rating system, and quality of evidence was evaluated using the GRADE approach. Publication bias was assessed using funnel plots and fail-safe *N*. A sensitivity analysis was performed excluding high risk of bias studies.

Results: The five databases yielded 5458 results; 542 were eligible for full-text screening, and 12 were included in the final analysis. We found that integrated interventions improved outcomes for people with ABI at all levels, from impairment to quality of life, and that these improvements

were maintained at follow-up. Combining all outcomes across timepoints produced an effect size of *small-to-medium* magnitude ($g=0.38$). These effects were robust, based on the GRADE rating (*high*), sensitivity analysis (11/12 studies were of *high* quality), non-significant heterogeneity and absence of publication bias. No variables moderated these effects.

Conclusions: This review provides strong evidence supporting the potential for integrated interventions to create meaningful improvements in the lives of people with ABI.

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Session 2

“This group... I felt like I was medicating myself from this cyberscam illness that was living with me”. A qualitative evaluation of co-designing cybersafety training resources with and for people with acquired brain injury

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Background and Objectives: Online scams are increasingly prevalent and distressing. Individuals with acquired brain injury (ABI) may have unique risk factors and vulnerability to online scams for which tailored cyberscam interventions are required. To address this, a co-designed approach was utilised to collaboratively develop cybersafety resources with people with living expertise of ABI and scams. In depth examinations of the co-design experience is needed to inform future utilisation of this methodology within this and other research endeavours.

Method: Adults who took part in up to three focus groups to co-design cybersafety training resources were invited to participate. Seven cyberscam survivors with ABI and one ABI carer participated in one-on-one semi-structured qualitative interviews

exploring their co-design experiences.

Six-phase reflective thematic analysis was conducted to produce an understanding of the key themes and develop a thematic map.

Results: All participants shared positive co-design experiences, which were conceptualised across six themes. Group Bonding: An overwhelming sense of support emerged amongst peers and facilitators through a shared purpose. Taking Ownership: Participants felt a sense of ownership by creating their own intervention and felt empowered by their agency in helping others. Validated and Valued: Taking the lead during discussions increased their confidence and self-esteem. Stronger Scam Awareness: Participants learnt about scams and recognised their personal vulnerability. Normalising Scams: their sense of shame was reduced by openly sharing personal stories without judgement and hearing their respected peers talk about being scammed. Staying Connected: Participants identified a desire for ongoing training and involvement in peer-led groups to expand the project outcomes. Considerations for adjustments to support communication, memory impairments and fatigue were recommended.

Conclusions: Participant accounts of the co-design experience extended beyond project and resource design and resulted in unanticipated therapeutic benefits relating to increased insight and emotional recovery from feelings of shame. Potential mechanisms underpinning this were the peer group format and opportunities to make genuine contributions. Recommendations for informing future cybersafety interventions and generalising these positive co-design experiences in non-cybersafety projects will be discussed.

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Proposal of a Common Terminology for the Neuropsychological Rehabilitation

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Background and objectives: The literature on neuropsychological intervention (NI) uses a variety of terms to refer to equivalent constructs, making it difficult to compare intervention programmes and their outcomes. The purpose of this presentation is to present a unified terminological framework for describing neuropsychological intervention programmes.

Method: The terminological framework was developed based on a previous proposal for common terminology by Johnstone and Stonnington (2011) and driven by Cognitive Psychology conceptualizations.

Results: The terminological framework was organized into two sections: (a) neuropsychological intervention, which includes neurocognitive stimulation, neurocognitive training, and neurocognitive rehabilitation, as well as neuropsychological rehabilitation; and (b) neurocognitive functions, which include temporal and spatial orientation, sensation, perception, constructional abilities, attention, memory, language, reasoning in various forms (e.g., abstract reasoning, and numerical reasoning), and executive functions.

Conclusions: Most NI tasks target a main neurocognitive function, but there are underlying neurocognitive functions that may impair the performance in the former. Since it is difficult to create a task that is solely focused on one neurocognitive function, the proposed terminology should not be viewed as a taxonomy, but rather considered

dimensionally, with the same task allowing to work different functions, in varying grades. Adopting this terminological framework will allow to define the targeted neurocognitive functions more accurately and simplify the comparison of NI programmes and their outcomes. Future research should focus on developing a list of tasks and strategies for each neurocognitive function.

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Lives Shadowed by Losses: The Story of Patients with Accelerated Long-term Forgetting and Their Family

Law, Cecilia¹; Juraskova, Ilona²; Thayer, Zoe³; Nikpour, Armin⁴; Mary Burns¹ and Lah, Suncica¹

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Background and Objectives: Accelerated long-term forgetting (ALF) is a form of memory impairment characterized by adequate learning and recall of information after short delays followed by excessive forgetting over long delays. No study to date, to our knowledge, has investigated the lived experiences of patients with ALF. Yet, understanding of patients' experiences is crucial for the development of clinical interventions and support services. The current study aimed to explore ALF experience, as reported by patients and their family members (FMs).

Methods: Mixed methods study. The study involved patients with epilepsy who displayed ALF (n=16) and their FMs (n=5) who participated in semi-structured interviews. The interviews were audiotaped, transcribed verbatim, coded, and thematically analyzed. Patients also completed a set of psychosocial questionnaires and memory tests.

Results: Qualitative analyses of patients' experience with ALF revealed two inter-related themes: (1) losses across personal, relationship and functional domains; and (2) emotional difficulties. Similarly, our quantitative analyses revealed that patients

reported lower self-esteem (relative to the general population) and quality of life (compared with the epilepsy population). Patients also frequently reported elevated psychological difficulties and significant functional impairments, involving their work or social lives.

Conclusions: Our study provides the first in-depth account of the multi-faceted significant psychosocial difficulties faced by patients with AFL. Our study highlights the urgent need for development of targeted treatment and support services for this neglected clinical population.

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The utility of the Cognitive Reserve Index questionnaire in chronic traumatic brain injury

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Background and Objectives: Cognitive reserve may be a protective factor for long-term cognitive and functional outcomes after moderate-severe traumatic brain injury (TBI). The Cognitive Reserve Index questionnaire (CRIq) purports to measure cognitive reserve multidimensionally, across the domains of education, work, and mentally stimulating (leisure) activities, but has not been evaluated in TBI groups. This study aimed to examine the relationship between cognitive reserve measured with the CRIq and cognitive and functional outcomes in a chronic TBI cohort. Further, the study aimed to clarify the utility of the CRIq compared to common proxies of cognitive reserve (premorbid IQ and years of education) in TBI.

Method: Participants were 105 individuals with moderate-severe TBI and 91 controls. TBI participants were 10-33 years post-injury. Cognitive outcomes comprised verbal memory, visual ability and memory, executive attention, and episodic memory. Functional outcome was measured with the Glasgow

Outcome Scale Extended. The CRIq total score and three subscale scores (education, work, leisure) were examined.

Results: In the TBI cohort, associations were identified between two CRIq subscales and cognitive factors (CRIq education and verbal memory, $p = 0.002$; CRIq work and executive function, $p < 0.001$). There were no associations between CRIq leisure and cognitive outcomes, or between CRIq and functional outcome. Model selection statistics suggested premorbid IQ and years of education provided a better fit than the CRIq for the relationship between cognitive reserve with two cognitive factors and functional outcome, with neither model providing an improved fit for the remaining cognitive factors.

Conclusions: Our findings indicated that cognitive reserve contributes significantly to long-term clinical outcomes following moderate-severe TBI. The relationship between cognitive reserve and long-term cognitive and functional outcomes following TBI is best characterised with traditional proxies of cognitive reserve, mainly premorbid IQ, rather than the CRIq. This suggests that in TBI cohorts, the cognitive demand, time and effort required of patients to complete the CRIq may outweigh the additional information captured by the CRIq as compared to the traditional proxies of cognitive reserve.

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One Size Does Not Fit All: A qualitative investigation into the housing needs and preferences of people with Huntington's Disease

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Background and Objectives: Huntington's disease (HD) results in progressive cognitive, physical and psychiatric symptoms, eventually resulting in a prolonged palliative stage and death. Due to the complex interplay of these symptoms, housing and support needs of people with HD change as the disease progresses, often resulting in long hospitalisations and admission to residential aged care. It remains unclear which housing and support models are effective for people with HD to be able to be supported for their whole lives in the community. The aim of this research was to explore professional and caregiver perspectives on the housing and support needs of people with HD.

Method: Qualitative interviews were conducted with 21 professionals internationally who had expertise in housing and support for people with HD and 11 caregivers of people with HD. Semi-structured interview questions focused on the housing and support models that exist for people with HD in the country they were based, evidence of their effectiveness and opportunities to further improve housing and support.

Results: There was a primary theme of "*One size does not fit all*". Three secondary themes included 1) *Experiences of housing and supports* where participants described a lack of available housing, difficulty finding expert supports, discrimination and poor care; 2) *Key elements of housing and support requirements* where participants described the unique housing and support needs and preferences of people with HD throughout the trajectory of their illness; and 3) *A fit-for-purpose funding scheme* where participants described the need for funding to be proactive, flexible and responsive when needs change unexpectedly.

Conclusions: People with HD require a responsive and flexible system of funding to remain living at home or in specialist housing that matches physical and behavioural needs. Disability, Allied Health, Positive Behaviour Support and nursing supports underpinned by expertise in HD are crucial for sustainable disability support and the ability for informal caregivers to maintain their role.

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An international transdisciplinary training program for allied therapy students in Positive Behaviour Support: Findings from a pre-post feasibility study

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Background and Objectives: Challenging behaviours are prevalent, distressing and enduring after acquired brain injury (ABI). Despite this, neurorehabilitation clinicians report feeling inexperienced and inadequately trained in behaviour interventions.

Specifically, clinicians report low levels of understanding and confidence in Positive Behaviour Support (PBS), for which there is growing evidence and support from national funders. We have designed and evaluated a flexible, multi-component and person-driven intervention combining PBS and cognitive-executive strategies for ABI, called PBS+PLUS. We developed post-graduate experiential training to address the knowledge-practice gap and translate PBS+PLUS into clinical practice. The objective of this pilot study was to evaluate the training program for feasibility and identify opportunities for refinement.

Method: Pre-post intervention design. Allied therapy trainees at two clinical services were recruited to participate (Monash University, Melbourne, Australia, neuropsychology trainees, $n=4$; The College of Saint Rose, New York, USA, speech and language therapist trainees, $n=3$). Participants completed a one semester placement which included direct clinical experience with adult clients with ABI, four workshops, case discussion, individual and group supervision, set reading and written assignments. Pre- and post-training self-evaluation was completed by all trainees using a survey of knowledge, confidence and skill in PBS+PLUS. Expert independent reviews of a random selection of participant session recordings were available for two trainees.

Due to the small sample size, descriptive and summary data was visually analysed.

Results: In regard to feasibility, attendance and active participation in the training program by all participants was high.

Qualitatively, participants were very positive about the educational need and quality of the training provided. Participants at both services demonstrated marked improvement on all aspects of self-rated competency. Expert independent reviews indicated good competency and increasing adherence.

Conclusions: The measures selected are sensitive in detecting clinically meaningful changes. The pilot findings provide support for ongoing development and expansion of the clinical training program. Larger sample sizes and follow-up within occupational settings are needed to empirically evaluate the benefit and impact of training on future clinical service delivery.

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Predictors of Quality of Life in Post-Acute Neurorehabilitation for Adults with Acquired Brain Injury

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Background and Objectives: Following acquired brain injury (ABI) common sequelae of injury can impact an individuals' capacity to engage in previously valued activities, resulting in impaired health-related quality of life (HRQOL). This study aimed to identify predictors of HRQOL in a cohort of adults with ABI undergoing post-acute community-based neurorehabilitation and disability support services to detail the needs of this vulnerable population.

Methods: A retrospective cross-sectional study using routinely collected demographic and clinical data. Quality of life was measured using the Quality of Life after Brain Injury Inventory (QoLIBRI) and functional independence was measured using Functional

Independence and Assessment Measure (UK FIM+FAM) for adults with ABI (n=67) undergoing post-acute rehabilitation or disability support programs in Perth, Western Australia, from 2015–2021. A mixed model regression was conducted. Key predictors entered into the model were time since injury, functional independence, age, gender, type of injury, and time since admission to post-acute services.

Results: Quality of life was impaired in this sample (QOLIBRI M=57.2, SD=17.4), indicating that mood disorders are likely prevalent. Older age ($p<0.001$), Shorter time from admission ($p=0.04$), shorter time since injury ($p<0.001$) and lower functional independence (UK FIM+FAM, $p<0.001$) significantly predicted poor HRQoL. This indicates that older individuals, those earlier in their recovery journey, and those with more severe physical and cognitive impairments, reported poorer quality of life.

Conclusions: Poor HRQoL makes this population vulnerable to mental health comorbidities during recovery from ABI. Low levels of completion of the QOLIRI (only 19%) indicates that quality of life is not adequately considered in the context of post-acute care. Time since injury, time since admission, age and functional independence significantly predicted HRQoL. As improvement of quality of life is the fundamental goal of neurorehabilitation and disability services following ABI, understanding the relationship between these potentially modifiable factors is critical to improving outcomes and developing meaningful interventions throughout admission to neurorehabilitation services to providing the best chance at a meaningful life.

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Recommendations for allied health professionals helping disability support workers to deliver best practice from the perspective of adults with acquired neurological disability

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Background and Objectives: People with acquired neurological disability have the right to access quality disability support. Paid support is primarily provided by disability support workers. Beyond support workers, allied health professionals play an important role in providing holistic support to people with disability. This presentation aims to inform allied health professionals how best to help support workers deliver best practice using recommendations grounded in the lived experience of adults with acquired neurological disability.

Method: A constructivist grounded theory study was conducted to gain an understanding of the factors that influence the quality of support grounded in the experience of adults with acquired neurological disability. Twelve adults with neurological disability participated in in-depth interviews about their experiences and perspectives on support. Qualitative analysis of the transcripts followed a three-stage coding process, identification of themes and sub-themes, and explorations of the relations between themes. This presentation draws from the active practice elements that emerged from the findings.

Results: A model of the factors that influence the quality of support was developed, with key themes situated in the dyadic space between the person and the support worker. Beyond the dyadic space, themes concerning the impact of the broader context were evident. Allied health professionals play an important role in modelling quality practice (i.e., knowing the person and their goals, taking an individualised and humanising approach, listening, focusing on the person's needs and preferences, being reliable, and engaging in reflective practice). In addition, where appropriate, allied health professionals should communicate with support workers about the person's needs and therapeutic goals. Moreover, allied health professionals can contribute to educating support workers to recognise each person as an individual by providing individualised, rather than

generalised disability-type, support recommendations.

Conclusions: The themes identified align with an individualised, person-centred approach to support. Yet, the delivery of quality support is dependent on a complex model of interrelated factors, influenced by the broader context. As allied health professionals play a key role in the broader support team, it is important to focus on support practice, and identify and model practical application of skills and behaviours.

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Session 3

Telehealth administration of discourse measures: A comparison of traumatic brain injury and matched controls

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Background and objectives: Impaired discourse production is commonly reported for individuals with traumatic brain injury (TBI). Discourse deficits can negatively impact community integration, return to employment, and quality of life. COVID-19 restrictions have reduced in-person assessment services for people with communication impairments. Advances in telehealth may help speech and language therapists to assess discourse more systematically and improve access to services. The present study examined the feasibility of telehealth administration of narrative and procedural discourse tasks to individuals with TBI and matched controls and compared discourse performance from the UK and USA.

Methods: Twenty individuals with TBI and twenty healthy controls, ages 18-55, were recruited from the UK and USA. For participants with TBI, time post-injury was at least

three months with no aphasia. Control participants were matched for sex and age. Feasibility of measures included time taken to complete assessment and reported problems. Discourse samples were transcribed verbatim and analysed using story grammar analysis (for narrative discourse) and identification of propositions (for procedural discourse). Inter-rater reliability was calculated using percent agreement for 50% of the data. Nonparametric analyses compared the performance of the two groups.

Results: Narrative and procedural discourse samples were collected via telehealth in approximately 10 minutes with no reported technical difficulties or complaints from any participants. For narrative discourse performance, there were significant differences for the TBI and control groups for measures of complete episodes ($p < 0.001$) and missing episodes ($p = 0.005$). No significant group differences were noted for any of the procedural discourse measures. There were some differences for procedural discourse between the US and UK participants.

Conclusions: Results support the feasibility of collecting discourse samples via telehealth. Although the participants' discourse performance distinguished the TBI and control groups on the narrative task, no differences between the groups were noted for the procedural task. The narrative discourse task may have been more difficult, or the procedural task was more challenging for the participants to interpret via telehealth. This finding suggests that alternate modalities or tasks may discriminate groups more clearly for the collection of procedural discourse samples.

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Towards an internationally-adapted new assessment of rapid forgetting for possible early detection of dementia

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Background & Objectives: Due to improved healthcare, the global population is ageing with a parallel increase in prevalence of dementia; in 2015 estimates suggested that 46 million people were living with dementia, predicted to increase to 75 million by 2030 and 131 million by 2050. Worryingly, this increase is not uniform with low and middle-income countries predicted to have higher rates of diagnoses. Physical treatment of dementia is not yet possible but earlier diagnosis could be used to provide cognitive support to lessen the burden of illness. The Verbal Associative Learning & Memory Task (VALMT, Jansari & McGibbon, 2022) has been shown to be sensitive for detecting older adults who complain of everyday memory problems but who pass standard tasks. This study aimed to adapt and translate VALMT into several languages and to then evaluate efficacy of the translations.

Method: VALMT involves a phase of learning unrelated word pairs (e.g. TROOP-SHAWL) to a set criterion and then being tested with cued recall (e.g. TROOP-???) 55 minutes and 24 hours later. The word pairs and instructions were translated into Polish and Italian; further, the word pairs were adapted to those that are used by English-speakers in India. The study was run online with a dedicated webpage for each language; any individual over 18 years of age could participate with data collection ongoing (currently UK N=105, Indian N=154 Polish N=201 & Italian N=116).

Results: English VALMT was able to differentiate between the Younger (<30yrs) and Older (>55yrs) participants ($F(1, 58) = 13.72, p < .001, \eta_p^2 = 0.19$). Further, by separating the latter group into those who learned to criterion rapidly and those who learned slowly, it was found that Slow Older learners forgot much more rapidly compared to their Fast Older age-matched controls who did not show much difference to the Younger group ($F(3.1, 88.9) = 21.52, p < .001, \eta_p^2 = 0.43$). The age effect so far is also replicated in Indian English, Polish and Italian.

Conclusions: Our findings suggest that the VALMT has potential for detecting rapid forgetting in otherwise healthy ageing

populations to identify those at risk of developing dementia at earlier time points than is currently possible; additionally, it translates well to other languages. Such findings could have important implications in terms of providing early support for such individuals and for highlighting the negative impact of repeated head injuries to the sporting world.

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Measuring Compensatory Strategy-Use Related to Slowed Information Processing Speed: A Validity and Reliability Study of the Virtual Meeting Task

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Objective: Many individuals with acquired brain injury (ABI) experience slowness in information processing speed (IPS). Compensatory strategy learning has been proven to support people with ABI in the execution of everyday activities, such as participating in a group conversation. However, there are few instruments to objectively measure compensatory strategy-use related to slowed IPS. Inspired by the recent trend to work from home, we developed an innovative experimental task, the Virtual Meeting task (VMT), that examines strategy planning, strategy execution and task execution in a pre-recorded digital setting. This study investigates the reliability and validity of the VMT as an objective assessment of compensatory strategy-use related to

slowed information processing speed (IPS) in a healthy population.

Participants and Methods: The study population consisted of 53 healthy adults (Group 1: older adults, n = 29, age 65-80; Group 2: younger adults, n = 24, age 18-30). The participants performed parallel, randomised versions of the VMT at baseline level (T0) and at a eight-week follow-up (T1). In the VMT, the participants were instructed to partake in a pre-recorded virtual meeting and answer questions on the content of the conversation. Participants could use strategies to prevent time pressure (e.g. note-taking) and manage induced time pressure by selecting strategy buttons that elicited a response (e.g. asking for repetition). After each scene, the participant answered questions on the content of the conversation. Test-retest and parallel-form reliability of the VMT were examined using intraclass correlation coefficients (ICC). Construct validity was assessed using the Mental Slowness Observation Test (MSOT), an instrument measuring strategy-use and performance on untrained tasks. Ecological validity of the task was evaluated using a self-rated questionnaire on compensatory strategy-use in everyday life (Time-Pressure Questionnaire) and a self-rated questionnaire evaluating perceived consequences of slowed IPS (Mental Slowness Questionnaire; MSQ).

Results: A compound score was calculated that included three variables: task execution (number of correct reproductions of information points), strategy planning (number of implemented strategies prior to task), strategy execution (number of implemented strategies during task). The ICC_{2,1} between Version 1 and Version 2 was 0.806 (IC 95%: 0.649 – 0.891), which indicates a good test-retest validity. The ICC_{2,1} between Timepoint 1 and Timepoint 2 was 0.806 (IC 95%: 0.660 – 0.886) and indicated good parallel-form reliability. A significant moderate correlation of 0.441 (p < 0.001) was found between the baseline measure of the VMT and the Elements score on the MSOT. The variability between the test scores was high (t = 2.723, p = 0.009). The nonsignificant correlations with the Time-Pressure

Questionnaire ($r = -0.79$, $p = -0.573$) and the MSQ ($r = -0.188$, $p = 0.177$) did not confirm the ecological validity of the VMT.

Conclusions: This study shows that the VMT is a reliable and valid instrument to objectively measure compensatory strategy-use related to slowed IPS, and has moderate construct validity, good test-retest reliability and good parallel form reliability.

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The Validation of The Arabic Version of the Rivermead Behavioural Memory Assessment (RBMT-3) for Use in Arabic Population with Acquired Brain Injuries (ABI)

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Introduction: The RBMT-3 is the most recent version of the original everyday memory assessment, the Rivermead Behavioural Memory Test, developed in (1985) by Wilson and colleagues. The RBMT-3 has been translated and culturally adapted into Arabic and piloted on a small group of volunteer participants. The current study aims to validate this Arabic RBMT-3 in a larger population and in a clinical sample of ABI patients.

Objectives: To evaluate the psychometric properties of the Arabic RBMT -3. To create normative scores appropriate for the Arabic population.

Participants: The healthy group ($n=100$) and the ABI group ($n=31$)

Procedure: Participants completed the first version of the RBMT-3 and another cognitive assessment (COGNISTAT). Participants also completed the Prospective Retrospective Memory Questionnaire (PRMQ). Ten to fourteen days after the first session, participants completed the second version of the RBMT-3.

Results: Significant positive correlations were found between the total scores of Arabic RBMT-3 and the total score of the COGNISTAT (version 1: $r_s=0.26$, $p=0.02$, version 2: $r_s=0.72$,

$p=0.00$); and between the RBMT-3 total score and memory subtest of the cognistat (version1 $r_s=0.24$, $p=0.03$, version 2: $r_s=0.6$ $p=0.01$) for the healthy group. Similar correlations were found for the ABI group.

The healthy group performance was significantly better than the ABI group which indicates good discriminative validity of the Arabic RBMT-3 (version1: $z=-7.03$, $p=0.00$, version2: $z=-3.12$, $p=0.00$) Excellent parallel form reliability was found between the total scores of both versions of the Arabic RBMT-3. No significant correlation was found between PRMQ and the Arabic RBMT-3. No relationships were found with age and education and performance on the Arabic RBMT-3. The Saudi participants performed significantly better than the non-Saudi group in the orientation and story subtests of the Arabic RBMT-3.

Regarding the effect of gender, significant differences were found between males and females in the story, messages, face recognition and orientation subtest. No significant gender differences were found in the total RBMT-3 scores. Subtest raw scores were converted to scaled scores with a mean of 10 and a standard deviation of 3.

Conclusion: The Arabic RBMT-3 demonstrated good concurrent validity, discriminative validity and excellent parallel form reliability. No evidence of good ecological validity was found in this study. Conducting the study during the Covid 19 pandemic hindered the data collection and resulted in imbalanced number of participants in each age group. it was not possible to create age-based norms.

Recommendations for future research: Further investigation is required to generalize these results on larger samples and across different Arabic populations.

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A new initiative to raise awareness and knowledge of the neurobehavioural approach to rehabilitation

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Background and Objectives: While the neurobehavioural approach to rehabilitation is evidence based (McMillan & Wood, 2017), with demonstrable effectiveness (Wood et al., 1999; Catellani et al., 2010), there is lack of consensus on what its active ingredients are (Hart & Ehde, 2015) and variability on how it is implemented in practice. We developed a new initiative, called “rehab mantras”, aimed at developing a common understanding of the key components of the approach to rehabilitation used in The Disabilities Trust, and supporting its internalisation and practical implementation. This paper describes the methodology we followed, and reports results on its feasibility and impact, throughout the pilot.

Method: Statements, also known as rehab mantras, summarising core principles of the neurobehavioural approach to rehabilitation were generated through literature review and consensus among a small panel of rehabilitation practitioners and researchers. These were shared on a monthly basis with all staff across our organisation, including those not directly involved in the delivery of rehabilitation. Activities to promote the mantras included blog posts on the intranet, printed posters in services, brief interviews with staff, discussion forums with service users, regular internal social media posts (Yammer) and a review quiz. Progress was measured by monitoring the number of poster downloads, views and interactions with contents (e. g. likes), and number of participants and scores on the quiz.

Results: At the end of pilot, four rehab mantras were developed and three disseminated, as described. Cumulative poster downloads grew from 10 to 32 and Yammer posts of the first three mantras had been seen a total of 917 times. A total of 17 staff took part in the review quiz and achieved an average score of 82%, although this varied across the different mantras.

Conclusions: We developed a simple, innovative method for disseminating and increasing awareness of core clinical principles of our neurobehavioural approach to rehabilitation. At present the impact that this

initiative has on actual practice is still to be determined. However, the initiative meets some of the principles recognised to support knowledge translation (Davis et al., 2003), and regular engagement with both staff and service users has presented the opportunity to obtain qualitative feedback how key principles are understood and applied in day-to-day service delivery.

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Dating and romantic relationships for adults with brain injuries, learning disabilities and autistic spectrum disorders: What is the research for supportive interventions?

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Background and Objectives: Relationships are among the highest areas of dissatisfaction for adults in neuro-atypical populations. Neuro-atypical adults may struggle with dating and relationships for many reasons; however, dating and relationships are often neglected in support or rehabilitation. There is a lack of clarity over how this area should be supported. The aim of this review is to understand the current evidence in supporting dating and relationships in three neuro-atypical populations, autism spectrum disorder and Asperger’s syndrome, learning disability and Acquired Brain Injury.

Method: A systematic search was completed on 23.12.2018, across nine databases (CINAHL, Communication Source, PsycARTICLES, PsycINFO, SocINDEX, MEDLINE, Embase, AMED and EMB Reviews). Studies reported in English were included if they tested an intervention to support dating or relationships with adults in the identified populations. Included studies were rated using the Physiotherapy Evidence Database (PEDro) scale, Quality assessment Tool for Before-After Studies with No Control Group or the Risk of Bias in N-of-1 Trials (RoBiN-T) scale. Intervention description was rated using the Template for Intervention Description and

Replication (TIDieR). Participant and intervention details were extracted from fair and good quality studies for comparison.

Results: Eleven articles that described ten studies met the inclusion criteria. There were a range of new (n=8) and existing interventions (n=2), addressing both dating (n=7) and marital relationships (n=3). The descriptions of the interventions were variable, scores on the TIDieR ranged from 1 to 9/12, with most studies (n=8) scoring 6 or below. There was a range of methodological quality, from poor (n=5), fair (n=4) to good (n=1). The focus of each intervention differed by population and relationship type, but there were similar approaches used (e.g. behaviour rehearsal or education). The outcome measures used varied across studies. Positive results were reported in all studies, but often not for all outcome measures. Due to the different areas of focus in each intervention and the different outcome measures, it is difficult to directly compare the effectiveness of the interventions.

Conclusions: Further research is needed with greater methodological rigour applied to the design and description of the interventions. There also needs to be greater consensus on the content of interventions and outcome measures used.

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Patient Reported Experiences of Using Community Rehabilitation and support services for people with Long Term Neurological Conditions: A Quantitative Systematic Review.

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Background and Objectives: Good quality community rehabilitation and/or support is required to facilitate health and well-being for people with long term neurological conditions (LTNC). Patient reported experience measures (PREM's) of a quantitative nature are

increasingly being used to evaluate process quality within health and social care. Some of these are reported to be valid, reliable measures of patient experience. Objectives of this quantitative Systematic Review (SR) are 1. To identify validated PREM's (quantitative) being used in Community Rehabilitation and/or Support Services. 2. To identify how people with LTNC experience community rehabilitation and/or support services. This SR complements a previously published qualitative SR.

Method: A quantitative SR was undertaken using the Joanna Briggs Institute (JBI) approach. Eight data bases were searched for peer reviewed quantitative studies between 2005 and 2021 which met the inclusion criteria. Data extraction and quality assessment for sixteen studies were performed by two reviewers. Narrative synthesis of findings was conducted.

Results: *Objective 1:* Twelve validated PREM's have been used in multimodal multidisciplinary and single component or single discipline community rehabilitation and support services. They capture information about how people with different LTNC (N=15,775) experience the process of receiving Community Rehabilitation and Support between 2005 and 2021. *Objective 2:* Patient experience scores indicate positive and negative experiences for people with Acquired Brain Injury (ABI n=493) Multiple Sclerosis (MS n=12,960) and Parkinson's Disease (PD n=2332). Positive experiences were associated with each of the eight Picker Institute principles of Person-Centred Care. Less positive experiences for people with MS, PD and ABI were associated with Principle 1 (accessibility); Principle 2 (coordination/continuity); Principle 5 (information provision) and Principle 6 (Involvement in decision making). People with MS and PD also expressed less positive experiences associated with Principle 7 (empathy and emotional support) during physician consultations.

Conclusion: Quantitative validated PREM's have provided evidence of process quality and person-centred care within community rehabilitation and support services across large data sets of heterogeneous neurological

conditions and geographical locations. Quality improvement initiatives within community rehabilitation and support services for people with MS, PD and ABI should target processes relating to accessibility, coordination/continuity, information provision; involvement in decision making and empathy and emotional support. Validated PREMs can be used alongside qualitative data about patient experience to improve the quality of community rehabilitation and support for people with LTNC.

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Remote tele-assessment of executive functions: Adapting the Jansari assessment of Executive Functions, JEF[®]

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Background and Objectives: The COVID-19 pandemic meant that most in-person testing was halted; the transition to remote neuropsychological testing proved a challenge, especially for the assessment of executive functions (EFs), where standard tests do not adapt well to online platforms. To address this, the Jansari assessment of Executive Functions (JEF[®], Jansari et al, 2014) and its equivalent for children, JEF-C[®] were adapted for remote testing using Zoom.

Method: JEF[®] resembles a computer game; for the adult version, the participant pretends to be an office assistant performing simple administrative tasks, and for the children's version, the child is in charge of running their own birthday party. JEF[®] is run on a laptop and administration takes about 45 minutes with performance being evaluated on eight EF constructs. The protocol was adapted with the assessor sharing their JEF[®] screen on Zoom with the participant who had to verbally navigate through the environment to perform the necessary tasks. Study 1 used JEF[®] to explore individuals with eating disorders

(N=17) and Study 2 used JEF-C[®] to explore Looked After Children (LAC: N=26). To assess the integrity of the new protocol, for each study, two assessors independently scored 10 of the participants.

Results: For JEF[®], the inter-rater reliability (IRR) for the eight constructs was between 0.94 and 1.00 while for JEF-C[®], the IRR was between 0.86 and 1.00. In terms of construct validity, remote_JEF[®] was able to reliably differentiate participants with self-reported eating disorders from matched controls ($F(8, 24)=4.457$, $p=.002$; Wilks' $\Lambda =.402$; partial $\eta^2 =.598$) and power to detect the effect was high (.975). Similarly, remote_JEF-C[®] found a significant difference between LAC and age-matched controls ($t(50)=4.11$, $p < .001$, $d=1.14$).

Conclusions: The results demonstrate that a complex virtual-reality task can be adapted to be used remotely. The strong IRR and group differences demonstrate that the new protocols have good psychometric properties. The findings ensure that clinicians and researchers can reliably assess EFs in individuals who they are not able to meet physically using a version of a task that has previously been shown to have a high level of sensitivity. This offers increased clinical accessibility for patient groups living remotely from neuropsychology services and/or with limited access to transport, and for reducing costs associated with travel for medicolegal casework.

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Prevalence of posttraumatic stress disorder after stroke: A systematic review

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Background and objectives: Posttraumatic stress disorder (PTSD) has shown to be related to worse functional outcome in individuals with stroke. We aimed to 1) provide a comprehensive overview of the evidence of prevalence of PTSD after stroke, 2) explore possible differences in prevalence for different pathogenic origins of stroke (e.g. ischemic stroke, intracerebral hemorrhage, subarachnoid hemorrhage or transient ischemic attack) and 3) to explore whether the prevalence of PTSD differs between the different operationalization of PTSD (e.g. the use of (semi-) structured interviews versus self-report questionnaires).

Method: Potentially relevant peer-reviewed articles were identified by searching EMBASE, PsycINFO, and PubMed from inception to May 2nd 2022. Studies consisting of 1) adults with ischemic stroke (IS), intracerebral hemorrhage (ICH), subarachnoid hemorrhage (SAH) or transient ischemic attack (TIA) in whom 2) PTSD was established with self-report questionnaire or (semi-)structured interview at least one month after the stroke and 3) a prevalence number was extractable from the paper, were included. Data were extracted on patients demographics, study characteristics (e.g., sample size, PTSD instrument and type), as well as study findings.

Results: Thirty studies of 28 samples (N=3698) met inclusion criteria, of which 82% intended to specifically measure PTSD due to stroke. Median PTSD prevalence overall was 20.8% (range 2.9-71.4). Self-report questionnaires were used in 24 studies (85.7%) and (semi-)structured interviews in 6 studies (21.4%), together comprising 12 different instruments. Median prevalence was 24.2% (4%-71.4%) indicated by self-report questionnaires and 17.4% (2.9%-27%) indicated by (semi-)structured interviews. Median prevalence in ischemic stroke was

13.4% (11%-25.2%), in SAH 30% (18%-71.4%) and in TIA 16.7% (4.4%-29.6%).

Conclusions: Results suggest that PTSD is common after stroke, underlining the importance of screening for PTSD and awareness of PTSD in all types of stroke. Prompt referral to trained health care professionals in diagnosing and treating PTSD is called for in case of symptoms of PTSD lasting longer than a month. Further research is needed to elucidate the topics of this review and efficacy of treatment of PTSD in stroke patients.

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Session 4

Eye-tracking in innovative neuropsychological assessment of visual working memory

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Background and aims: Memory complaints are frequently reported after acquired brain injury. In both the laboratory and during clinical neuropsychological assessment, visual working memory (VWM) is typically assessed by estimating the maximum storage load. Traditionally, subjects are asked to keep an increasing amount of shortly presented stimuli in mind and to provide an answer or perform an action after a certain delay to assess how many items were retained. However, these settings ignore that in daily life information generally remains available in the external world; we can easily sample information from the environment as a form of 'external memory' by making eye movements. This sampling strategy reduces the need to use the maximum VWM storage capacity. Vice versa, the need to rely on VWM capacity increases when accessing external information is

difficult or costly. We investigated whether people change their strategy in information uptake dependent on information availability. We expected that people reduce memory load when sampling is possible (i.e. many eye movements with little information), and memorize more information when sampling is costly (e.g. maintain more information per eye movement). Additionally, we expected that patients with memory problems are hindered in effectively employing such a strategy shift, which would be reflected in different eye movement behaviour.

Methods: Patients with severe memory problems (Korsakoff's syndrome) and controls were instructed to copy a puzzle from one side of the screen to the other while their eyes were tracked. The availability of the example puzzle was manipulated by introducing a gaze-contingent waiting time to provoke different strategies (sampling vs. storing).

Results: Controls successfully shifted from sampling to storing when information became less readily available. Although patients also showed less sampling, indicating an attempt to adjust their strategy, they could not memorize more items at once and made more errors.

Conclusion: Our results suggest that successfully switching strategy from sampling to storing in working memory is (at least partly) dependent on memory functionality. People without memory deficits are generally able to employ an adaptive trade-off between sampling and storing. For patients it might be more profitable to adhere to the sampling strategy and use information piece by piece rather than attempting to memorize more information at once when accuracy is at stake.

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Exploring the potential of a minimal dataset for adults with acquired brain injury: A cross-sectional comparison of patient characteristics across healthcare settings

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Background and objectives: Acquired Brain Injury (ABI) can have lifelong consequences. As a result, persons with ABI receive care from various healthcare settings. However, many facilities have their own preferences towards measurement instruments used to evaluate patients, impeding data comparison across healthcare settings. Previously, we developed a minimal dataset for persons with ABI (MDS-ABI) to facilitate data compatibility. In the current cross-sectional study, we used the MDS-ABI to inventory and compare characteristics of patients in three healthcare settings. Information resulting from this comparison can inform clinical decision making and assist treatment design.

Method: Participants were within one of three healthcare settings: 1) receiving residential care, 2) receiving non-residential care, or 3) receiving no care related to their ABI. Data were analysed using one-way ANOVAs or nonparametric Kruskal-Wallis tests and χ^2 -tests or Fisher's exact tests. Games-Howell post-hoc tests or nonparametric pairwise comparisons with corrections for multiple testing were used to evaluate combinations of between-group differences

Results: A total of 123 patients was included. Patients of residential care settings overall had the lowest level of cognitive functioning ($p < .001$), ADL independence ($p = .003$), and societal participation ($p = .003$) compared with patients in the non-residential or no care group. However, all groups showed remarkable disabilities: 76% of the total group reported severe fatigue, 51% experienced communication difficulties, and 20% reported depressive symptoms.

Conclusions: This first direct comparison of persons with acquired brain injury across healthcare settings indicated that consequences of ABI are widespread, which demonstrates the need for broad measurement of potential consequences of ABI. It helps to better recognise symptoms and facilitates the collection and comparison of study data in large patient groups. Future directions should be aimed at further implementation of the MDS-ABI to guide clinical decision-making and promote data sharing.

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The Scottish Memory Aid Survey: What Memory Aids are Recommended for People with Dementia or MCI?

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Background and Objectives: Memory impairments are common in those living with dementia, affecting everyday functioning and quality of life. Electronic memory aids have been found to increase remembering in other clinical populations, but evidence for their usefulness for people with dementia or Mild Cognitive Impairment (MCI) is limited. This study examined what memory aids healthcare professionals working within dementia services in Scotland recommend to people with Dementia or MCI, and the barriers to using technological memory aids.

Method: 138 healthcare professionals working within dementia services across Scotland completed an online survey examining what memory aids they recommend to people with MCI/Dementia and what they think the barriers are to using technological memory aids with this population.

Results: Participants recommended non-technological memory aids/strategies more than technological tools. The most recommended strategies were leaving objects in the same place and using a whiteboard or wall-chart. The most frequently recommended assistive technology was alarm clocks. Only 20.3% of professionals said that mobile phones are often recommended. Most participants believed technology reminding tools can be effective for clients with MCI/dementia and reported feeling confident in recommending such tools. However, most also believed their clients would have difficulty accessing and learning to use these technologies. Length of time working in dementia services was associated with likelihood of recommending technological reminding tools. Additionally, participants who were more confident in using technology themselves felt more confident in recommending technology-based reminders to their clients.

Conclusions: Healthcare professionals working with people with MCI/dementia recommend non-technological memory aids/strategies more frequently than technological reminding tools. Perceived barriers to use of technological memory aids were that clients would find it difficult to learn to use new technology and that they prefer writing things down. The potential benefit of training on how to actively promote the use of technological tools to improve the quality of life of people with dementia is highlighted. Future research is required to understand the optimal design of reminding tools to ensure accessibility and effective use for this population.

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The effect of a short add-on sleep intervention in the rehabilitation of individuals with Acquired Brain Injury: A randomized controlled trial

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Background and Objectives: Sleep disturbances are common following acquired brain injury (ABI) and often interfere with the rehabilitation process. However, directed treatment of sleep disturbances is often not part of standard rehabilitation care. This randomized controlled trial examines the effect of a short add-on sleep intervention aimed at altering dysfunctional sleep patterns, in addition to rehabilitation treatment as usual (TAU).

Method: A total of 54 adults (range: 18-73 years old) with ABI (≥ 3 months post-injury) and self-reported sleep disturbances receiving outpatient rehabilitation care were included and randomly allocated to a treatment or TAU control group. The treatment group received a sleep intervention (4 individual sessions in a 6-week period) in addition to their rehabilitation treatment. The sleep intervention was provided by trained cognitive rehabilitation therapists and consists of psychoeducation, sleep hygiene, stimulus control and an adapted form of sleep restriction. Baseline and post-treatment assessments were conducted. The main outcome measure was sleep quality, measured by the Pittsburg Sleep Quality Index (PSQI). Secondary outcome measures were the Hospital Anxiety and Depression Scale (HADS), the subtests of the Dutch Multifactor Fatigue Scale (DMFS) and the Dysfunctional Beliefs and Attitudes about Sleep (DBAS-16). **Results:** Analyses were performed with 23 participants in the treatment group and 18 in the control group. Results showed that the sleep intervention resulted in better sleep quality in the treatment group as compared to the TAU control group (PSQI: $p = <.001$, $eta =$

.449, 95% CI [2.65-5.67]). Post-treatment, 65% of the participants showed reliable improvement and 48% were recovered (PSQI ≤ 6), compared to 12% improved and 11% recovered in the control group. Furthermore, the sleep intervention resulted in less dysfunctional beliefs and attitudes about sleep, a smaller impact of fatigue in daily life and better coping with fatigue. No significant improvements were found regarding consequences or symptoms of fatigue, nor in anxiety and depressive symptoms.

Conclusions: A short sleep intervention produced significant improvements in sleep quality and fatigue in people with ABI in addition to rehabilitation treatment as usual. This short add-on sleep intervention could be implemented in neuropsychological rehabilitation settings.

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Sensory Hypersensitivity after Acquired Brain Injury: from a Patients' Perspective

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Background and aims: Patients recovering from acquired brain injury (ABI) frequently experience sensory stimuli as very intense and overwhelming. Even though this sensory hypersensitivity is often mentioned, there is no consensus or conceptual clarity on this phenomenon. The aim of this study is to investigate patients' perspective on sensory hypersensitivity after ABI and its impact on their daily life. Insight from patients' perspectives on the characteristics and factors related to sensory hypersensitivity after ABI might provide new directions for future research.

Method: This qualitative study was conducted using in-depth semi-structured interviews in 18 patients with ABI (stroke, brain tumor or traumatic brain injury) who reported complaints of sensory hypersensitivity. Patients were selected at the outpatient clinic of the department Rehabilitation, Physical Therapy Science & Sport of the University Medical Centre of Utrecht (UMCU). Inductive content analyses approach was used to analyse the data.

Results: Emerging themes included type of sensory stimuli, the course and consequences of sensory hypersensitivity and coping strategies. All patients reported to experience sensory hypersensitivity since ABI. Hypersensitivity for auditory and visual stimuli were most reported, followed by olfactory stimuli and taste. Patients indicated that hypersensitivity increased in case stimuli were multisensory (light and sound). Moreover, results show that sensory hypersensitivity can have physical (e.g. headache, fatigue) and psychological (e.g. stress) consequences and has a major impact on (social) activities and return to work.

Conclusions: This study indicates that patients with different types of ABI experience sensory hypersensitivity in various sensory modalities. Sensory hypersensitivity has a negative impact on patients' participation in different aspects of daily life activities. To better help ABI patients who experience sensory hypersensitivity, we need more insight in the concept of sensory hypersensitivity. Based on patients' perspectives on sensory hypersensitivity, future studies should not only focus on ABI characteristic, but also on cognitive (e.g. attention) and psychological factors (e.g. stress and coping) in relation to sensory hypersensitivity.

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Objective assessment of visuospatial neglect using pupillometry

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Background and Objectives: Visuospatial neglect ("neglect") is a frequent and disabling disorder after stroke. The core deficit of neglect is an ipsilesional attention bias. Neglect is typically assessed with paper-and-pencil tasks, bound to problems such as the need to overtly respond, effects of compensatory strategies, and effects of motor impairments. We present a pupillometry-based method to assess neglect in an objective manner. The method is based on the principle that changes in pupil size associated with changes in light level are not purely reflexive, but are modulated by spatial attention. More specifically, the pupil changes size as covert attention is moved to parts of the visual scene of differing brightness. Here, we present how this phenomenon can be exploited to assess neglect in stroke patients.

Method: In this proof of principle study, stroke patients with left-sided neglect after a right-sided lesion who were admitted to inpatient rehabilitation ($N = 3$) and age-matched healthy controls ($N = 12$) viewed alternating black/white and white/black hemifields or bars in the periphery while fixating the center of a visual display. Pupil size was measured with an eye tracker. We assessed whether pupil light responses predominantly reflected the brightness of the left or right side of the screen. Differences in pupil responses were compared with performance at traditional paper-and-pencil measures for neglect (i.e. cancellation, line bisection, greyscales) and observations of neglect in daily life (i.e. Catherine Bergego scale).

Results: In the patients with left-sided neglect, pupil size strongly reflected the right side of the visual display, indicating a default attentional bias towards the right. This was not seen for the age-matched controls. The performance on line bisection and greyscales tasks did not dissociate this clearly between neglect patients and age-matched healthy controls.

Conclusions: Pupil light responses reveal neglect, without the need of an explicit response. This method can be exploited to improve diagnosis of visuospatial neglect

following stroke. Objective assessment of neglect is relevant not only for clinical diagnosis (i.e. to provide psycho-education and to select appropriate treatment), but also for outcome measurement in clinical trials.

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Session 5

Evaluating Interdisciplinary Rehabilitation for Concussion Recovery (iRECOVeR), a 12-week treatment for persistent post-concussion symptoms: A single-case experimental design

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Background and Aims: Multiple factors contribute to persisting post-concussion symptoms (PPCSs) after mild traumatic brain injury (mTBI), often requiring multimodal treatment. This study aimed to evaluate the preliminary efficacy of a novel interdisciplinary intervention that incorporates neuropsychology, physiotherapy, and medical treatments to target PPCSs.

Method: A single-case experimental design with randomisation to multiple baseline lengths (2, 4, or 6 weeks) was repeated across fifteen participants (53% female) with mTBI ($M_{age}=38.27$ years, $SD=15.68$). The 12-week treatment incorporated goal-setting, education, cognitive-behavioural psychological intervention, medical review and management, and physiotherapy treatments. Target behaviour was severity of PPCSs (Rivermead Post-Concussion Symptoms

Questionnaire), assessed three times weekly during baseline and treatment phases. Secondary outcomes included measures of mood, sleep and fatigue, physical functioning, health-related quality of life, and illness perceptions. Primary and secondary outcomes were assessed at baseline, pre-treatment, post-treatment, and one- and three-month follow-up. Goal attainment scaling (GAS) was used during the treatment to measure personally meaningful goals. Data were analysed visually and statistically. Qualitative interviews captured participant experiences. **Results:** Analysis of the initial 15 cases showed moderate-large effect sizes in reducing PPCSs in 12/15 cases, although only seven reached statistical (Tau-U) and clinical (visual analysis) significance. These improvements were maintained at 1- and 3-month follow-up and were accompanied by reductions in fatigue, sleep difficulties, symptoms of depression, anxiety, and stress, and illness perceptions. All participants had clinically significant improvements in at least one outcome, with 81% of individual therapy goals achieved using GAS.

Conclusions: While most participants endorsed some residual PPCSs post-treatment and at follow-up, responses to interviews and GAS demonstrated goal attainment, suggesting that whilst symptom reduction is not always achieved other areas of function can improve. Findings support current clinical guidelines which emphasise interdisciplinary concussion management and underscore the potential benefit of coordinated treatments in reducing PPCSs burden and contributing to functional goal attainment. This pilot will inform the trial design of a phase-II randomised controlled trial.

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Evaluation of the Telehealth Making Sense of Brain Tumour program for people with primary brain tumour: A randomised controlled trial

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Background and Objectives: Evidence-based interventions addressing the psychosocial needs of people with brain tumour and their families are lacking. This pragmatic randomised control trial (RCT) aimed to evaluate the efficacy of the Telehealth Making Sense of Brain Tumour (Tele-MAST) program for improving mental health and quality of life relative to usual care.

Method: Adults with primary brain tumour experiencing distress (Distress Thermometer ≥ 4) were recruited between 2018 and 2021 and randomly allocated to the 10-session Tele-MAST program or usual care from cancer counselling services. Assessment of mental health and quality of life (QoL) was conducted at pre-intervention, post-intervention (primary end-point) and 6-weeks post-intervention follow-up. The primary outcome was clinician-rated depression on the Montgomery-Asberg Depression Rating Scale (MADRS).

Results: 82 participants (34% benign, 20% lower grade glioma, 46% high grade glioma) were recruited; 83% of whom were in the clinical range for depression (MADRS ≥ 12). Controlling for baseline functioning, Tele-MAST participants demonstrated significantly lower depression than usual care participants at post-intervention ($p < .001$) and 6-weeks follow-up ($p < .01$). The proportion in the clinical range for depression was lower after Tele-MAST (48%) than usual care (78%, $p < .05$). Tele-MAST participants reported

better global QoL at post-intervention than usual care participants, although this was not sustained at 6-weeks follow-up. Tele-MAST participants reported lower anxiety and distress levels at 6-weeks follow-up than usual care participants but not at post-intervention. **Conclusions:** The Tele-MAST intervention was more effective for reducing depressive symptoms than standard care at post-intervention, with effects maintained at short-term follow-up. Overall, these findings highlight the benefits of extended psychological support tailored to the psychosocial needs of people with brain tumour.

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Implementation of the Multiple Errands Test: A Knowledge Translation Approach

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Background and Aims: The complex and real-world nature of the Multiple Errands Test (MET) makes it a valuable and increasingly popular assessment of cognitive function. However, these same qualities make its local implementation challenging. As each setting must develop a site-specific version which reflects the unique environment in which the assessment will be conducted, a multitude of MET formats are in circulation across the international literature and clinical practice. The format and procedures of these versions vary widely, limiting psychometric support for the MET and complicating the adaptation process for those wishing to implement the measure at new local sites. The aim of this study was to produce an evidence-based MET implementation guideline which outlines core components which should be included across

versions whilst providing guidance on making appropriate adaptations where necessary, to promote consistency and efficiency in the site-specific implementation process.

Method: The CAN-IMPLEMENT© knowledge translation framework informed a structured approach to the adaptation of twenty-two published MET procedures for the development of an implementation guideline. Applicability of the guideline was supported by a two-phase revision process, in which a local hospital and community version produced from its recommendations were administered with forty-two neurologically intact participants and stakeholder feedback integrated within the guideline.

Results: The Baycrest MET-Revised and MET-Revised were selected as the basis of the administration and scoring procedures (respectively) recommended in the implementation guideline due to their recency, psychometric properties and frequency of use. Several pragmatic design considerations, which arose within other MET studies and during the KT process, also informed the guideline. Based on this, the implementation guideline recommended a range of core MET components (i.e., those which should be included across versions) and adaptable peripheries (i.e., component details which may be modified if required by the local setting) as well as implementation examples.

Conclusions: This KT process highlighted significant variability in the published MET versions, and the consequent need for a more streamlined and supportive process for evidence-based implementation of the measure locally. The proposed guideline provides a systematic yet flexible guide for site-specific MET development.

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Session 6

“We can all relate”: Participants’ experience of an emotion-oriented group intervention for ABI

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Background and objectives: Group interventions are carried out routinely across neuropsychological rehabilitation services, to improve understanding of brain injury and aspects of impairment. Treatment provided in a group-modality can bring additional benefits, such as co-operative learning. However, there are very few studies which explore subjective perceptions and experiences of such interventions. The present study evaluated a group-based educational intervention for the consequences of acquired brain injury (ABI), which had an emphasis on well-being and emotion regulation.

Method: Using qualitative interviews, the study investigated the lived experience of participating in the seven-session programme, the better to identify the salience and value of individual elements. Twenty participants with ABI took part in individual interviews, after completion of the group programme (the Brain Injury Solutions and Emotions Programme, BISEP). Using a thematic analysis approach, five themes were identified.

Results: The themes were: 1) Long term consequences and psychological needs of survivors; 2) Positive experience of participating in BISEP; 3) BISEP as a social milieu; 4) BISEP as a place to learn; and 5) BISEP as a place to promote positive emotional experiences.

Conclusions: Many people reported high acceptability and perceived value of BISEP, and its role in facilitating adjustment and understanding of injury. Of particular importance was the opportunity to socialise with people who “*can all relate*”. The findings especially highlight the relevance of group programmes for ABI, promoting emotion regulation, and practical tools that are delivered optimistically.

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Assessment of executive functions in patients with schizophrenia and patients with substance use disorders using a virtual reality task - Jansari assessment of Executive Functions (JEF[®])

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Background and Objectives: Impairments in Executive Functions (EFs) are often observed in schizophrenia (Sch) and substance use disorders (SUD). However, previous studies using standard tests present inconclusive and conflicting findings. The main aim of this study was to investigate differences in EFs between Sch patients, SUD patients, and healthy controls (HCs) using a new ecologically-valid non-immersive virtual reality assessment.

Method: Thirty-nine Sch patients, 58 SUD patients, and 76 HCs took part in the study. EFs were assessed using the Jansari assessment of Executive Functions (JEF[®]).

Results: Sch patients and SUD patients had lower results in overall JEF[®] score ($F = 18.31$; $p < 0.001$; post hoc: $p = 0.002$ and $p < 0.001$, respectively), adaptive thinking ($F = 7.19$; $p = 0.001$; post hoc: $p = 0.037$ and $p = 0.001$, respectively), action-based perspective memory ($F = 6.83$; $p = 0.001$; post hoc: $p = 0.002$ and $p = 0.027$, respectively), even-based perspective memory ($F = 6.63$; $p = 0.002$; post hoc: $p = 0.045$ and $p = 0.003$, respectively), and time-based prospective memory ($F = 22.22$; $p < 0.001$; post hoc: $p < 0.001$ and $p < 0.001$, respectively) than HCs. Moreover, SUD patients had lower results in prioritization ($F = 3.93$; $p = 0.022$; post hoc: $p = 0.025$), selective

thinking ($F = 8.76$; $p < 0.001$; post hoc: $p < 0.001$), and creative thinking ($F = 7.62$; $p < 0.001$; post hoc: $p < 0.001$) than HCs. Most differences were still significant after adjusting for age. There were no significant differences between Sch patients and SUD patients.

Conclusions: In conclusion, we found that Sch patients and SUD patients were had significant EFs impairments when using an ecologically-valid assessment. These results may be useful to develop new computer-based training programmes for cognitive remediation in the ecological context of Sch patients and SUD patients. In the future, multimodal studies that integrate structural (white and grey matter) and functional (resting-state and task-based) imaging are necessary to understand further the neuropathophysiological basis of EFs impairments in Sch and SUD, and to identify the possible underlying alterations in neural networks.

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Neurovisual rehabilitation care for visual complaints in people with multiple sclerosis

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Background and Objectives: The prevalence of visual complaints in people with multiple sclerosis (MS) is high and the nature of these complaints varies greatly. Independent mobility, work-life and leisure activities may require more effort when dealing with visual complaints. However, these complaints are often underestimated, difficult to recognize and may lack attention in clinical care. To support these people in reaching care for these complaints, it is important to have a clear overview of the visual complaints people with MS report. Furthermore, insights in how these visual complaints relate to measured

visual functions (such as visual acuity, visual field and eye movements) and cognitive functions, may help us to provide suited neurovisual rehabilitation care.

Results: We provide an overview of the self-reported visual complaints in a large cohort of people with MS (n = 493) as reported on the Screening Visual Complaints questionnaire (SVCq) and discuss the current possibilities for neurovisual rehabilitation for people with MS in the Netherlands. We will present the relationship between the reported visual complaints and measured visual and cognitive functions. While we found that having more visual complaints were related to more function impairments, specific visual complaints could hardly be explained by function impairments. Some measures that are indicative of global cognitive functioning in MS may help us further understand visual complaints.

Conclusions: Neurovisual rehabilitation aims to optimize an individual's quality of life and participation in daily life. Reported visual complaints should be taken into account in the referral to neurovisual rehabilitation. The assessment of visual and cognitive functions could support in tailoring a rehabilitation program to an individual's needs. Since we still do not fully understand visual complaints, future research should determine further possible explanations to improve rehabilitation care that focuses on visual complaints in pwMS.

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The Montreal Cognitive Assessment is a valid cognitive screening tool for cardiac arrest survivors

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Background and Objectives: The survival rate of out-of-hospital cardiac arrest (OHCA) patients has increased over the past decades. This gives rise to a growing number of patients with hypoxic-ischemic brain damage and cognitive impairment. Currently, cognitive impairment is underdiagnosed in OHCA patients. There is a need for a validated cognitive screening instrument to identify patients with cognitive impairment. This study aimed to examine the diagnostic value of the Montreal Cognitive Assessment (MoCA) in patients after OHCA.

Methods: Survivors (age ≥ 18 years) of OHCA completed the MoCA and a gold standard neuropsychological test battery, including tests for memory, attention, perception, language, reasoning, and executive functioning, at around one year after OHCA. Results of the MoCA are related to the results of the neuropsychological test battery. Analyses of diagnostic accuracy included receiver operating characteristics and calculation of predictive values.

Results: We included 54 OHCA survivors (mean age = 57.3, 74% male). The area under the curve (AUC) was 0.8, 95% CI [0.67, 0.93]. The MoCA showed excellent sensitivity of 86%, 95% CI [57, 98] and adequate specificity of 70.0%, 95% CI [53, 83] to detect cognitive impairment at the regular cut-off score of 26. The positive predictive value of the MoCA was

50%, 95% CI [30, 70] and the negative predictive value was 93%, 95% CI [76, 99].

Conclusion: This study shows that the MoCA may be a valid cognitive screening instrument for use in the OHCA patient population.

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The Feasibility of a Gamified Compensatory Goal Management Training for Brain Injured Individuals

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Background and Objectives: Over the past decade, brain games became an increasingly popular intervention. Existing brain games are almost always forms of function training (i.e. focusing on restoring damaged cognitive functions), although the evidence base for transfer of treatment effects to daily life is larger by using compensatory strategy training. For this reason, we developed and evaluated a compensatory Goal Management Training [GMT] game including a mobile application, for brain injured individuals with executive problems. The objective of the study was to establish the feasibility by evaluating the usability and technology acceptance.

Method: We developed and optimized the gamified GMT using an iterative standardised step-by-step methodology to determine the usability, technology acceptance, and feasibility. During the developmental process, feedback from different user-perspectives were obtained using a multi-method approach (e.g. multidisciplinary brainstorm sessions, think-aloud sessions, and questionnaires). At the end of the developmental iteration we quantified the usability of the mobile application by the System Usability Scale (SUS) completed by brain-injured individuals. The feasibility of the gamified GMT in

rehabilitation practice is currently under further investigation in a pilot study.

Results: During the iterative developmental process, brain-injured individuals (N=22) rated the usability of the mobile application as high (Mean=85.8 [range: 67.5 to 97.5]). However, preliminary findings of the ongoing pilot study indicate that brain-injured individuals (N=3) rate the usability as low for the mobile application (Mean=53.8 [range: 42.5 to 65]) as well as for the game (Mean=53.3 [range: 32.5 to 75]). In addition, brain-injured individuals (N=3) rate the ease of use (Mean=3.9), usefulness (Mean=3.9), enjoyment (Mean=4.3), and intention to use (Mean=4.7) as slightly low on the Technology Acceptance Model (TAM) questionnaire for the game. Also, the mobile application is rated as slightly low on ease of use (Mean=4.5) usefulness (Mean=3.2), enjoyment (Mean=2.8) and intention to use (Mean=3.3).

Conclusions: Based on the SUS and TAM questionnaires, the results suggest that although the usability is rated as positive during the development phase, it still needs to be improved when the gamified GMT is implemented in clinical practice. However, the results are based on preliminary findings from a small sample size.

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What's in the Black Box of Rehabilitation? Towards an Intervention Taxonomy: A Mixed-Methods Study Within a Child Neurorehabilitation Service

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Background: Throughout the literature, rehabilitation has been likened to a black box. This is due to a limited understanding of exactly how rehabilitation promotes recovery following brain injury, attributed to poorly specified interventions (DeJong et al., 2004). This is especially true within child rehabilitation, where guidelines remain underdeveloped. As such, the World Health Organisation (WHO) have commenced the development of the Intervention Classification

of Health Interventions (ICHI). The aim of ICHI is to provide an everyday tool for reporting and analysing health interventions throughout healthcare settings, including rehabilitation (WHO, 2019). ICHI codes are comprised of a simple structure, containing three axes. These codes sit within four broad domains, based on the intervention target, similar to those within the ICF. However, in order to provide value as an intervention taxonomy, it is paramount that ICHI is both reliable and user-friendly.

Objective: To pilot the use of ICHI to code interventions within a child neuropsychology and rehabilitation service and examine the efficacy of the tool.

Method: The current study utilised a mixed methods design to explore the efficacy of ICHI for coding paediatric neurorehabilitation interventions. Firstly, an interactive ICHI training course was delivered to the practitioners. Practitioners were then given four weeks to attribute ICHI codes to a databank of 200 anonymised paediatric client neurorehabilitation interventions, collated from clinical case notes. Throughout the coding process, practitioners attributed a Likert scale “ease of coding rating” to each intervention, ranging from “very easy” to “very difficult”. Once the practitioners had coded all 200 interventions, semi-structured interviews were conducted to explore practitioners’ experiences of using ICHI.

Results: Ratings for “ease of coding” on a Likert scale had a median score classified as “relatively easy”. Despite this, analysis revealed poor interrater agreement for the generated ICHI codes, $k = -0.33$ (95% CI, -0.11 to 0.04), $p < 0.001$. Thematic analysis of interview transcripts explored this contradiction in results, revealing three main themes regarding the use of ICHI: Need for Development, Inadequacies, and Value of a Systematic Tool.

Conclusion: Overall, the findings suggest that ICHI requires significant expansion and development to accurately represent interventions within paediatric neurorehabilitation.

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An evaluation of whether robotic and smart technology care interventions for people with dementia adhere to recommendations for good psychological care

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Background and Objectives: The study evaluates recent research exploring the use of robotic or smart technology (RST) for people with dementia (PwD), assessing the adherence of studies to psychological principles of person-centred dementia care.

Method: Three databases (Ovid, PubMed, & ISRCTN clinical trials registry) were searched for studies published in English between 2013 and 2018, examining effectiveness of RST for PwD. Studies focussing on usability or caregiver burden, or workload alone were excluded. The studies were evaluated using the Dementia Psychological Care Benchmarking Scale (DeBs) to assess adherence to psychological care principles, and the QualSyst tool to assess methodological quality.

Results: An initial search resulted in 1,029 publications, of which 37 met inclusion criteria. Most studies considered the impact of RST on mood, engagement and quality of life of PwD. The primary outcomes for most studies were researcher-completed measures based on observation of the PwD. However, most studies considered caregiver/staff views as a secondary outcome. Most studies were categorised as ‘limited’ ($n = 33$, 89%) in relation to adherence to psychological care principles, with DeBs values ranging from 20% (limited) to 74% (good). QualSyst ratings ranged from 23% (limited) to 93% (strong), with many studies ($n = 17$, 46%) categorised as ‘adequate’ (50–70%). Only three studies tailored the intervention to each participant.

Conclusions: Results indicate the need for future studies to implement RST in a person-centred, individualised manner, encouraging PwD to exercise choice and

control. This serves as a baseline from which progress in this field might be measured in the future.

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Standardising and validating the Cleveland Verbal Working Memory Test with Interference (CVWMT-I)

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Background and Objectives: The current study addresses the need for improvement in the assessment of executive function (EF). An unpublished measure of working memory (WM) ability, the Cleveland Verbal Working Memory Test with Interference (CVWMT-I), incorporates an element of distraction, which enables more accurate prediction of how WM ability is used in daily life. This study presents psychometric properties and normative data for the CVWMT-I.

Method: Ninety-six volunteers from the general population, between the ages of 21-79 were recruited for participation. Participants were selected based on education level, age and biological sex. Exclusion criteria included current depression or anxiety, psychiatric or neurological diagnosis, or history of brain injury. Participants completed a neuropsychological test battery, including the CVWMT-I. Forty-eight participants completed version A of the CVWMT-I, whilst 46 completed version B, to measure parallel-form reliability. Thirty-five participants were audio recorded to measure inter-rater reliability, and 35 were re-tested on alternate forms four weeks later, to measure test-retest reliability. Convergent validity was measured via comparison of participant performance on background neuropsychological measures and the CVWMT-I. Pre-existing data on the CVWMT-I from 55 participants with traumatic brain injury (TBI) were compared to a

demographically matched sample of 40 participants to measure construct validity.

Results: Performance on the CVWMT-I was found to be mediated by IQ and age. A regression-based norming method was used, stratifying for IQ and age, using the Reg_Build_MR_Raw.exe programme. Letter Recall was found to be a sensitive measure of WM ability and correlated highly with other neuropsychological measures assessing similar constructs. Inter-rater and parallel-form reliability were high for both the Letter Recall and Reverse Counting measures, as was test-retest reliability for Reverse Counting. However, test-retest reliability was low for the Letter Recall measure. Normative participants performed better than those with TBI on the CVWMT-I, indicating good construct and ecological validity.

Conclusions: The psychometric properties of the CVWMT-I indicate that it is a good measure for use within clinical settings, with potential for wide accessibility, due to the employment of a regression-based norming method. Further research is required to assess clinical effectiveness of the CVWMT-I.

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Acceptance and Commitment Therapy (ACT) is feasible for people with acquired brain injury: A process evaluation of the BrainACT treatment

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Background and aims: Following an acquired brain injury (ABI), people often experience anxiety and depressive symptoms. Acceptance and Commitment Therapy (ACT) is a promising treatment option. Therefore, the aim of this study was to evaluate the feasibility of ACT for people with ABI. In addition, the feasibility of providing the BrainACT treatment through video conferencing during COVID-19 lockdowns was also investigated.

Method: A process evaluation of the BrainACT treatment was conducted alongside a randomized controlled trial investigating its effectiveness. BrainACT is an ACT intervention adapted for the possible cognitive deficits of people with ABI. The attendance and compliance rates, engagement with the protocol, satisfaction of participants and therapists, and perceived barriers and facilitators for delivery in clinical practice were investigated using semi-structured interviews with participants and therapists and therapy logs. Qualitative data were categorized based on content. Quantitative data were reported as descriptive statistics.

Results: 27 participants and 11 therapists participated in the research. We found high attendance rates (98.2%) and both participants as therapists were satisfied with the intervention. Moreover, participants were motivated and engaged in homework exercises. The compliance rate was however relatively low (75%). Adding two extra sessions is therefore recommended. Following the treatment, patients reported to still apply the ACT skills obtained during the BrainACT intervention. Key strengths such as structure provided with the bus of life metaphor, the experiential nature of the intervention, and the materials and homework were identified. Although, participants and therapists often preferred face-to-face sessions, it is feasible to deliver ACT through video-conferencing for people with ABI.

Conclusion: The BrainACT treatment is a feasible intervention for people with anxiety and depressive symptoms following ABI. In case BrainACT appears to be effective in the

accompanying RCT, we recommend implantation in clinical practice.

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Baseline levels of executive functions are associated with improvements in these domains after computerized repeated practice with strategy use instruction for children with acquired brain injury

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Background and aims: Children with acquired brain injury frequently have problems with executive functions, e.g., working memory, inhibitory control, and cognitive flexibility. The BrainLevel intervention combines computerized repeated practice with strategy use instruction as cognitive intervention. Our study's aim was to determine effectiveness of BrainLevel in improving children's executive functions. Also, we studied claims of previous studies in other populations that cognitive gains after cognitive interventions may depend on baseline level of cognitive functioning.

Method: In total, 32 children aged 8 to 18 years participated in this pretest-posttest study. All children had been diagnosed at least 6 months ago and were referred for cognitive rehabilitation. Children trained 5 times per week for 30 minutes per day at home with the

online training BrainGymmer and attended a weekly 45-minute strategy use instruction session with a cognitive rehabilitation specialist. Children's executive functions were assessed at baseline, after the intervention, and at a 3-month follow-up, using the Backward Corsi Block Tapping task (working memory), the Stop Signal Task (inhibitory control), and the Concept Shifting Task (cognitive flexibility).

Results: Results of RM ANOVA indicated marginal significant improvements in inhibitory control between baseline and posttest and baseline and follow-up. There were no changes over time in working memory or cognitive flexibility. Post-hoc partial Spearman correlation analyses revealed that baseline levels of executive functions may play a role in the effectiveness of the intervention. Specifically, we found significant negative correlations between baseline levels of working memory and cognitive flexibility and improvements on the corresponding tasks at posttest and follow-up. Lower baseline levels of inhibitory control were associated with more improvement at posttest on the inhibitory control measure.

Conclusions: Higher effectiveness of the BrainLevel intervention for children with acquired brain injury seems to be associated with lower baseline levels of executive functioning. Whole group analyses of the effects of cognitive interventions may mask differential effectiveness for specific subgroups, such as those with low levels of baseline functioning. In future analyses, we will examine (individual) effects of the BrainLevel intervention on self-reported cognitive functioning, participation, and aspects of quality of life.

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A values-based approach to goal setting in patients with severe acquired brain injury

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Background: Goal setting following ABI is vital in identifying the priorities of admission,

providing direction in therapy sessions, highlighting necessary interventions and evaluating progress. Ideally, goals should be appropriate, achievable, and measurable, involve the patient and be meaningful to them. The complex presentations of patients following severe acquired brain injury (ABI) can make effective patient-centred goal setting difficult to implement. This can lead to uni-professional goals that do not reflect individual patients' values, with a focus on decreasing care needs rather than improving quality of life; and poor accessibility of goals to patients and/or their families. A patient-centred, values-based goal setting pathway was launched on a level 1 neurorehabilitation and assessment service. This included a patient centred outcome (PCO) pathway for patients unable to participate in goal setting, such as those in prolonged disorders of consciousness (PDoC). The aim of this service development initiative was to develop a more holistic goal setting pathway that both adhered to national guidelines while at the same time served to promote interdisciplinary goal focused rehabilitation; improve patient motivation; and make rehabilitation more meaningful and of personal value to patients.

Methods: A service audit of adherence to the pathway processes was completed six months post implementation of the pathway and provision of training. The audit was separated according to rehabilitation versus PDoC assessment to assess whether there were differences in process adherence between these patient groups. Simultaneously, qualitative surveys and structured interviews were completed with staff and service users to elicit to establish their views and experiences of the new goal setting process.

Results: A global improvement in adherence to goal setting processes was seen, however, less adherence in PDoC patients' documentation was noted. Staff reported increased confidence in goal setting but had ongoing difficulties in setting PCOs in PDoC. Increased evidence of goals and PCOs being patient centred and values based was noted. Service users provided positive feedback on

this goal setting pathway and found goals accessible and understandable.

Conclusion: Although further development of the PCO pathway is required; this values-based approach appears to be meaningful to patients and families and an appropriate method of goal setting after severe ABI.

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Session 7

Are hospitalized COVID-19 patients in need of neuropsychological rehabilitation?

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Background and aims: COVID-19 is associated with a risk for neurological complications, suggesting an impact on the brain, thereby

potentially causing neuropsychological consequences. Hospitalized patients, particularly those needing intensive care, are vulnerable for the decline of cognitive and mental health. This study assesses the neuropsychological consequences of COVID-19. The generated knowledge will clarify whether specific follow-up care such as neuropsychological rehabilitation is needed and will aid its development.

Method: This multicentre prospective cohort follow-up study recruited 101 severely ill (intensive-care unit [ICU]) and 104 moderately ill (general ward [non-ICU]) patients hospitalized in one of six Dutch hospitals during the first European infection wave (March–June 2020). Cognitive dysfunction and mental health were investigated at around 10 months post-hospital discharge using a neuropsychological test battery and questionnaires. Global cognitive dysfunction (Montreal Cognitive Assessment [MoCA]<26), domain-specific cognitive dysfunction (z-score ≤ -2), cognitive complaints (number of complaints), clinically relevant anxiety, depression (Hospital Depression and Anxiety Scale [HADS] >7 per subscale), and post-traumatic stress (PTS; PC-PTSD-5 ≥ 3) were examined. Deviations from multivariate normative cognitive profiles (z-score ≤ -2) were determined.

Results: 40% (83/205) of patients scored below cutoff on the MoCA whereas only 12% (25/204) showed a deviant multivariate cognitive profile. Percentages of dysfunction per subtest ranged from 1% (Stroop interference) to 9% (Trail Making A/B), with no cognitive domain appearing particularly affected. Most patients (62% [122/196]) reported ≥ 3 cognitive complaints. Clinically relevant anxiety, depression and PTS were recorded in 19% (36/193), 15% (28/193), and 12% (24/194) respectively. ICU and non-ICU patients did not differ on any of the measures.

Conclusions: While cognitive screening suggested potential cognitive dysfunction in many patients, a small proportion thereof showed domain-specific cognitive dysfunction. The impact on mental health resembles that of non-COVID ICU patients. The study found no evidence for greater

neuropsychological consequences in severely ill compared to moderately ill COVID-19 patients. Consequently, general practitioners should be equally aware of long-term consequences in both groups and refer patients to existing follow-up and rehabilitation programs.

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Sensory Hypersensitivity after Mild Traumatic Brain Injury – A longitudinal study investigating the course of hypersensitivity and its predictive value on long-term outcomes

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Background and aims: Hypersensitivity to noise (NS) and light (LS) are presented as commonly reported post-concussion symptoms after mild traumatic brain injury (mTBI) and can substantially impact the patient's quality of life. However, studies assessing prevalence rates show varying results and the relations with long-term outcomes remain inconclusive. Hence, the current prospective longitudinal multicenter cohort study aimed to investigate (1) the prevalence and course of hypersensitivity symptoms over one year after mTBI and (2) the predictive value of early NS and LS on depression, anxiety, and quality of life 12 months post injury.

Method: 186 adults with mTBI and 181 control participants (with a minor orthopedic injury in at least one extremity) were recruited from six hospitals in the Netherlands and assessed four times (within two weeks, three months, six months and 12 months post injury), using self-report questionnaires. NS and LS items of the Rivermead Post-Concussion Symptoms Questionnaire were used to determine whether participants had hypersensitivity symptoms. Additionally, measures for anxiety, depression, health-related quality of life (HRQoL), and life satisfaction were included.

Results: We measured an elevated prevalence of NS and LS symptoms in the mTBI group compared to the control group in the early phase (between two weeks and three months after injury). This difference grew smaller over time and even disappeared for LS (from three months onwards). Approximately 3% of mTBI patients reported hypersensitivity at every time point during a year of follow-up, which did not differ significantly from controls (1%). Lastly, hypersensitivity did predict long-term anxiety, depression and HRQoL. However these effects disappeared when controlling for early post-concussion symptoms other than NS and LS.

Conclusions: These results confirm the presence of hypersensitivity symptoms after mTBI in the subacute stage after injury, but also provide assurance about the low occurrence of persistent hypersensitivity symptoms after mTBI and its benign course of recovery. Subsequently, it appears that hypersensitivity is not specific for mTBI in the long term, and questions arise whether there are psychological factors that play a role in maintenance of symptoms, as has been suggested for persisting symptoms in general after mTBI.

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Evaluating Brief Behavioural Activation for depression in adolescents with acquired brain injury using a single-case experimental design

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Background and Objectives: Adolescents with acquired brain injury (ABI) commonly experience depression due to difficulties with participation, quality of life (QoL), and performing usual activities. Brief Behavioural Activation (BBA) is a successful, values-based intervention for managing depression in typical adolescents and is investigated using a single-case experimental design with adolescents experiencing depression following ABI.

Method: Five adolescents aged 14-17 years with mild to severe ABI of various aetiologies completed a 6-week course of BBA following at least 2 weeks of baseline measurements. The primary outcome measures were mean daily activity scores out of 10 for 'achievement', 'closeness' and 'enjoyment' (MACES). After baseline MACES collection, activities aligning with participants' values were introduced or targeted during the intervention and further MACES were collected. Depression, QoL, and participation scores at post-treatment and follow-up were compared to baseline.

Results: No overall statistical changes in MACES for all participants were found, though each participant showed significant change in one area and some changes using visual inspection. All participants reported significant reliable change in depression scores at their follow-up sessions, with three showing clinically significant change. Three participants reported reliable change in QoL. All parents reported reliable change in participants' depression and QoL scores.

Conclusions: Despite few significant changes in MACES, increased participant insight linking valued activities, mood and positive reinforcement may have positively impacted on participants' depression and QoL outcomes. Rationale is presented for charities

and existing primary care services providing low-intensity interventions to consider trialling BBA for adolescents with depression following ABI. Future research suggestions are discussed.

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Cognitive assessment in Aotearoa New Zealand: Patterns of practice and cultural validity of measures

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Background and Objectives: Cognitive testing remains the most accurate way to quantitatively measure an individual's abilities, in order to detect and quantify impairment, and to inform diagnosis and treatment planning (Lezak et al., 2012). An extraordinary number of cognitive tests exists however and, since no standardised approach currently exists, test selection largely relies on the training and knowledge of the user. As a result, patterns of test usage have been shown to be highly variable, both between individuals and between nations (Pitrowski, 2017).

In New Zealand, there is currently no formalised training for Neuropsychologists, and few local 'standards' or 'guidelines' exist to inform assessment. As a result, many psychologists have adopted practices from the UK or North America, which are increasingly being understood to lack validity in the New Zealand context – particularly amongst indigenous Māori- contributing to much poorer health outcomes. Following similar survey approaches conducted overseas, the present study sought to explore current practice in New Zealand, as well as to evaluate the cultural and language appropriateness of these largely US- and UK- validated tests.

Method: The authors electronically surveyed practicing psychologists across New Zealand.

The first of a series of practice surveys focussed on the assessment of domains of memory and asked respondents to rate how commonly they utilised a range of tests. At the same time, psychologists were asked about the validity of those tests, in terms of language and cultural norms, for use with New Zealand clients.

Results: 93 psychologists self-identified as regular users of cognitive tests and completed the online survey. Participants reported similar 'top test' use to those identified in other Western countries, however there were many tests, commonly used overseas, that were not utilised at all amongst the New Zealand sample. Psychologists identified some significant language and cultural issues with applying some of the most commonly used tests to practice in New Zealand.

Conclusions: Cognitive tests, particularly in the domain of auditory memory, cannot be considered to be acultural, with some notable validity issues even amongst predominantly English-speaking nations such as New Zealand. Given the significant implications for diagnosis and rehabilitation, there is a significant need for the development of culturally valid assessment measures and standards of practice.

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How can self-awareness in the general population improve neuropsychological rehabilitation?

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Background: Self-awareness is the ability to reflect on your own thoughts, actions, and cognitions. After brain injury, impaired self-awareness can lead to unfavourable rehabilitation outcomes. There are different aspects of self-awareness and different measurement methods to assess them. The aim of the current study was to investigate how scores on different self-awareness measures are distributed in a healthy population and how these different measures correlate. This can provide a baseline of the general population that could be used as reference scores when studying self-awareness in brain injury patients.

Method: In this web-based study, healthy volunteers completed the metacognitive awareness inventory (MAI). The MAI measures aspects of offline awareness: knowledge of cognition and regulation of cognition. Online self-awareness is how well people can monitor their own accuracy during a task. This was measured using an adapted memory word pair recognition task. After each trial, participants rated their confidence on a 6-point scale. Before and after the task, they rated their overall (expected) performance on a 10-point scale. Two elements of online self-awareness were assessed: (1) task-related awareness using trial-by-trial confidence and accuracy to calculate type 2 AUROC, and (2) absolute discrepancy between overall performance accuracy and both the pre- and post-trial confidence ratings. Pearson correlations were used to investigate the relationship between the different measures.

Results: Scores from 164 participants (20.6±1.6 years old) were normally distributed on most awareness measures. The MAI subscale knowledge of cognition correlated positively with the MAI subscale regulation of cognition ($r(162)=.635, p<.001$). Online task-related awareness correlated positively with the absolute pre-task discrepancy score ($r(139)=.258, p=.002$) but correlated negatively with the absolute post-task

discrepancy score ($r(140)=-.228, p=.006$). The other correlations were not significant.

Conclusions: The offline awareness measures correlated with each other, as did the online awareness measures. However, offline measures did not correlate with online measures. This indicates that they measure different aspects of awareness. Therefore, it is essential to be alert to which aspect of awareness is being assessed. Ultimately, when measuring on the right levels, rehabilitation treatments can be tailored towards the specific aspect of awareness that is impaired.

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Assessing sensory sensitivity after acquired brain injury: the Multi-modal Evaluation of Sensory Sensitivity (MESSY)

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Background and aims: Acquired brain injury patients frequently experience an increase in sensory sensitivity after their brain injury. They may report feeling overwhelmed by background chatter, having an unpleasantly strong sense of smell, or feeling discomfort when surrounded by bright or multicolored visual stimuli. To date, due to a lack of adequate diagnostic tools that allow for a multi-modal assessment of sensory sensitivity after brain injury, the available scientific literature focuses on light and noise hypersensitivity in patients with a concussion. Therefore, it remains unclear if increased

sensory sensitivity is also prevalent after more severe types of brain injury (such as after stroke, moderate to severe traumatic brain injury as well as after a brain tumor) and if patients can experience an increased sensitivity to other types of sensory stimuli. To answer these questions, we developed the Multi-modal Evaluation of Sensory Sensitivity (MESSY), a questionnaire that is adapted to acquired brain injury patients and assesses sensory sensitivity across multiple sensory modalities (including visual, auditory, tactile, olfactory, gustatory and sensitivity to motion and environmental temperature). This study aims to explore the psychometric properties of the MESSY as well as compare the self-reported sensitivity to multi-modal stimuli between adults with different types of brain injury and neurologically healthy adults.

Method: 803 neurologically healthy adults and 362 adults with an acquired brain injury (including stroke patients, traumatic brain injury patients and patients with a brain tumor) completed the MESSY online.

Results: In neurotypical adults, the MESSY had a very high internal consistency ($\alpha = .9$) and adequate convergent validity ($R = .7$) and test-retest reliability ($R = .8$). The acquired brain injury patients who reported experiencing a post-injury increase in their sensory sensitivity during a semi-structured interview scored significantly higher on the MESSY compared to neurotypical controls as well as compared to acquired brain injury patients who did not report experiencing an increase in their sensory sensitivity post-injury.

Conclusions: We conclude that the MESSY can offer a valid and reliable assessment of sensory sensitivity and that increased sensory sensitivity is prevalent after different types of acquired brain injury (stroke, traumatic brain injury, brain tumor) as well as across several sensory modalities.

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Developing psychological wellbeing support for patients with Parkinson's disease: A qualitative study of patients' preferences and barriers to participation

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Background and aims: Parkinson's disease (PD) is associated with high rates of depression and anxiety, for which group talking therapies may be an effective treatment. Previous research has identified that incorporating the preferences of patients into psychological treatment can increase the effectiveness of interventions and decrease dropout rates. There is limited research into the preferences of patients with PD for psychological support and potential barriers to participation. The current study therefore aimed to gain a better understanding of the preferences of patients with PD for psychological support, and how barriers to participation can be overcome.

Method: Patients with PD in one UK health board were invited to take part. Participants were required to have a diagnosis of PD without dementia, be aged 18 or over, be fluent in English, have experienced difficulties with mental health, be able to consent to taking part, and be able to take part in an interview independently over phone or video call. Individual semi-structured interviews were conducted with 12 participants, covering topics such as content of psychological support and barriers to participation. Framework analysis was conducted to identify themes, and two participants were invited to provide further reflections on results.

Results: The resulting framework represents the factors influencing people with PD when considering accessing support from psychological services. Three interlinked factors were identified: the perceived need for support, choosing whether to engage in support given a need has been identified, and the barriers to accessing support. Subthemes highlighted the importance of providing support that is flexible, realistic and individually tailored to each person's needs and preferences. Suggestions are also provided for overcoming barriers to accessing psychological support for this population such

as offering choice and providing information on available services and how to access these.

Conclusions: The current study expands on previous findings through the identification of barriers regarding group psychological support and the impact of the Covid-19 pandemic, as well as investigating preferences for the content and format of support and exploring strategies to overcome barriers. The findings demonstrate the importance of increasing awareness of psychological services, improving service accessibility, and identifying the individual needs of patients with PD.

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Psychosocial group interventions for wellbeing in Parkinson's disease: A systematic review

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Background and aims: Group psychosocial interventions may provide benefits compared to individual therapy such as increased social support for patients and reduced treatment costs for healthcare services. However, no systematic review has been published to date focusing solely on psychosocial group interventions for wellbeing in Parkinson's disease (PD). This review therefore aimed to synthesise and evaluate this literature.

Method: Medline, Embase, PsycINFO and CENTRAL databases were searched up to May 2021 for randomised controlled trials (RCT) of group psychosocial interventions for people with PD with outcome measures related to wellbeing. The Cochrane risk of bias tool for randomized trials (RoB2) was used to rate the methodological quality of included studies.

Results: Twelve studies were included in the narrative synthesis. All studies were found to be at high risk of bias using the RoB2 tool. Group mindfulness-based interventions and group cognitive behavioural therapy (CBT) were found to improve multiple wellbeing measures for people with PD, with effect sizes ranging from small to large for mindfulness

and medium to large for CBT. Improvements in quality of life were reported for group psychoeducation and a group acceptance and commitment therapy-based intervention. Group counselling and a group behavioural intervention were not found to be effective.

Conclusions: The findings of this review suggest that group psychosocial interventions such as mindfulness-based interventions and CBT may be efficacious for use in clinical settings for people with PD. However, given the small number of RCTs in this area, the small sample sizes of included studies and resulting impact on statistical power, the high risk of bias of included studies, and the mixed results found for some interventions, further research into group interventions for people with PD is required to establish their clinical safety and effectiveness. This review builds on previous work and provides a unique synthesis of the evidence-base for group psychosocial interventions for people with PD.

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Session 8

Insights into the experience and triggers of sensory hypersensitivity after acquired brain injury

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Background and aims: Sensory hypersensitivity (SH), which has been described to occur e.g., after acquired brain injury (ABI), is defined as “perceiving a stimulus as an atypical or excessive stimulation that exceeds an individual’s usual level” and can lead to the feeling of being overwhelmed in stimulus rich environments. SH is related to social isolation and lower

quality of life. Nonetheless, SH remains relatively undiscovered, as it is usually investigated with standardized questionnaires assessing its presence, rather than exploring individual differences, triggers and consequences. Using semi-structured interviews, we aimed to look into these concepts and the experience of SH.

Method: Nineteen individuals who had sustained an ABI between the ages of 26 and 65 and experienced subjective SH, were interviewed for approximately 45 minutes. Questions were centered around three topics: subjective experiences of SH; situations/factors that influence it; ways to deal with symptoms. The interviews were audio-recorded and transcribed verbatim.

Results: Initial inductive content analysis revealed a great variety in how and when symptoms are experienced and to what extent. The negative impact of SH on daily living was consistently reported as high across participants. Collectively, participants reported SH to several stimuli, among which sound, light, moving images, touch but also internal stimuli such as emotional distress, however these differed for each individual. Situations described as triggering SH were e.g., birthday parties, shopping in busy cities and supermarkets. Triggering factors included fatigue, time of day, unexpected and uncontrollable stimuli, and number of people around. Participants pointed out the experienced benefits of using aids such as sunglasses and noise cancelling headphones. Participants gave advice on how to deal with symptoms, such as ‘spend time getting to know your new self’, ‘create a structure within your life’, ‘involve the people around you’.

Conclusions: The current outcomes stress the individual differences in how SH is experienced and dealt with. This suggests that there might not be one solution, but that clinicians should investigate the interplay of contributing factors for every individual separately. Research should focus on better instruments to assess SH, mainly assessing the extent, circumstances and underlying mechanisms of SH. Thematic analyses are currently ongoing and will be presented at the conference.

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Prevalence and nature of self-reported visual complaints in people with Parkinson's disease – Use of the Screening Visual Complaints questionnaire

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Background and aims: Visual complaints can have a vast impact on the quality of life of people with Parkinson's disease (PD). In clinical practice however, visual complaints often remain undetected. A better understanding of visual complaints is necessary to optimize care for people with PD and visual complaints. This study aims at determining the prevalence of visual complaints experienced by an outpatient cohort of people with PD compared to a control group. In addition, relations between visual complaints and demographic and disease-related variables are investigated.

Method: The Screening of Visual Complaints questionnaire (SVCq) screened for 19 visual complaints in a large cohort of people with idiopathic PD (n = 581) and an age-matched control group (n = 583).

Results: People with PD experienced significantly more complaints than control subjects, even when there was no underlying ophthalmological condition present. In addition, they experienced more limitations in daily life due to visual complaints. Most common were complaints regarding reading, unclear vision, trouble focusing, reduced contrast, blinded by bright light, and needing more light. Age, disease duration, and disease

severity had a significant positive relationship with the prevalence and severity of visual complaints in people with PD. Most complaints did not differ between the sexes.

Conclusions: Visual complaints are highly prevalent in people with PD. These complaints progress with the disease and can only partially be explained by the presence of ophthalmological conditions. Standardized questioning is advised for timely recognition and treatment of these complaints.

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Short-term effects of non-confrontational feedback on self-awareness of deficits, motivation and participation during cognitive rehabilitation after brain injury

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Background and Aims: Impaired self-awareness of deficits is common after brain injury. Patients may not understand the changes caused by the brain injury and the impact on them and others. Impaired self-awareness may limit motivation for and participation in rehabilitation therapy and may negatively affect rehabilitation outcomes. The aim of this study was to investigate the short-term effects of a new intervention on

self-awareness of deficits, motivation and participation during cognitive rehabilitation.

Method: In a multi-centre randomized controlled trial 64 participants with acquired brain injury were assigned to care as usual or a new intervention consisting of psycho-education and cognitive tasks combined with non-confrontational feedback. Short-term effects were investigated at the start and at three and six weeks after the start of cognitive rehabilitation. These included effects on self-awareness of deficits (Self-Regulation Skills Interview; Patient Competency Rating Scale), motivation for therapy scored by the patient (Motivation for Traumatic Brain Injury Rehabilitation Questionnaire) and by the therapist (10-point Visual Analogue Scale), and participation during therapy (Pittsburgh Rehabilitation Participation Scale). Mixed ANOVA analyses were used to evaluate effects.

Results: For both measures of self-awareness of deficits, no significant interaction effects between time and treatment group were found. There was a significant main effect of time on the SRSI ($F(2, 62) = 5.30, p < .05$); regardless of treatment group, self-awareness improved over time. For participation during rehabilitation and for motivation for therapy rated by the therapist, no significant interaction effects or main effects were found. For self-reported motivation for rehabilitation, significant interaction effects between time and treatment group were found ($F(2, 92) = 4.41, p < .05$); over time, self-reported motivation improved for the patients in the care as usual group.

Conclusions: Self-awareness of deficits improved over a period of six weeks of cognitive rehabilitation. An intervention consisting of psycho-education and cognitive tasks combined with non-confrontational feedback did not lead to better self-awareness of deficits than care as usual. In the care as usual group, self-reported motivation for therapy improved over time. Long-term effects at three, six, nine and twelve months after the start of the cognitive rehabilitation are currently being investigated.

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Rehabilitation for dating skills following Traumatic Brain Injury: What are the current practices and beliefs of healthcare professionals?

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Background and Objectives: Dating and intimate relationships impact life satisfaction and Quality of life after traumatic brain injury (TBI). However, adults with TBI may struggle in these relationships. Sexuality and relationships can be neglected in rehabilitation. Professionals may avoid addressing sexuality following brain injury, but it is unclear how they view dating. The aim of this study is to understand how professionals in the UK, who support adults after TBI, view dating and the inclusion of dating skills in rehabilitation.

Method: An online 52-item survey was sent to professionals in the UK involved in rehabilitation after TBI using the online platform Qualtrics. The survey was developed using previous literature into sexuality and dating in neuro-atypical populations. The survey was open for 12 weeks during March-May 2019. The primary data analysis included frequencies, proportions and graphs to allow visual interpretation.

Results: A total of 120 professionals completed the survey. There was strong agreement that dating skills are an important part of rehabilitation (>90%), but lower reported engagement with this work (53.3%). There were three professions, Psychologists, Speech and Language Therapists and Occupational Therapists, who were regularly identified as well-placed to engage in this work and who appear to already be more likely to have engaged in this work. Participants reported using a range of activities to support this area, including addressing disinhibited behaviour, how to meet and interact with new people, types of relationships and considering who may be appropriate potential dating partners. There

were also perceived barriers to including dating skills in rehabilitation, such as lack of knowledge, skills or resources for this work, lack of clear responsibility for this work and low confidence of comfort levels on the part of the professional.

Conclusion: This study has highlighted that among clinical practitioners dating skills are recognised as important to rehabilitation, but there is lower engagement with this work. Psychologists, Speech and Language Therapists and Occupational Therapists appear to be particularly well-placed to support this work. There was a clear desire among participants for more training and knowledge in how to address this area. More research is needed to identify how best to support this area and how to overcome the barriers to considering it as a routine part of rehabilitation.

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Posters: Wednesday

Post-Diagnostic Support Groups for People with Young Onset Dementia – the need for specialist services

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Post-diagnostic support groups for people with dementia have been evaluated in the past and shown to have a positive impact on service users' wellbeing and quality of life (Brooker et al., 2018, Cheston et al., 2003, Toh et al., 2016). However, most of the studies in this area focus on older people with dementia (65 years old and above) yet these groups are not always suitable for younger people because as they can view themselves as different to older people with dementia. They feel that they require specialist care (Rabanal et al, 2018; Carter et al, 2018), that they experience slightly more distressing symptoms (Hartmann et al, 2021), and they encounter different challenges, such as employment, personal finance and relationships, leading to

an overall negative impact on quality of life (Appelhof et al, 2017).

Limited evidence exists on the effectiveness of post-diagnostic support groups for younger people with dementia (Mayrhofer et al, 2018). However, Stamou et al (2021) found that age-appropriate services enabled people with young-onset dementia (YOD) to remain living at home for longer. They found that only 1/5 of the care was managed solely by a specialist YOD service and around 16% reported that no one managed their care, supporting the evidence that there is a lack of specialist services offered to people with YOD.

This poster presents the evaluation of the post-diagnostic support groups from younger people with dementia services in Northamptonshire. Both Living Well with Dementia groups & cognitive stimulation therapy have been offered. These were based on groups often used within older people's services but modified to include aspects relevant to people diagnosed younger than 65.

The findings focus on mood and wellbeing, using formal measures of quality of life (QOL-AD, Logsdon, R., 1996), mood (HADS, Zigmond, A. S & Snaith, R.P., 1983), general wellbeing (WHO 5., WHO, 1998) and cognition (Free Cog, Burns et al., 2021), as well as qualitative feedback from the service users. Initial findings suggest both groups are beneficial and qualitative feedback is suggestive that service users reported feeling like they benefited from having a group with people of similar experiences and felt it beneficial that the group was tailored specifically for their needs.

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The impact of a Memory Support Social Group at improving quality of life, positive outlook, friendship, belonging and functional ability in individuals with dementia and their carer

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Background: Social support is recognised within the United Kingdom's local and national policies as imperative in aiding an individual with dementia and their carers to navigate life after a dementia diagnosis. However, approaches to provide social support to individuals diagnosed with a dementia can often be fragmented. To improve access to support following diagnosis, the Memory Assessment Service in Corby and Northampton are working collaboratively with voluntary and third sector organisations in the development of a new Memory Support Hub. These have started in each locality as a way of meeting the social support needs for individuals with dementia and their carers. One aspect of this Hub is the development of a new memory support social group.

Objectives: The primary aim of the proposed evaluation was to assess the effectiveness of a memory support social group at improving the social and psychological lives of individuals with a dementia diagnosis and their carers. Feedback was also gathered to identify successful aspects of the group and areas for improvement.

Methods: Quantitative and qualitative measures were gathered at commencement of the group and after 3 and 6 months. Quantitative measures assessed quality of life, friendship and belonging, positive outlook and functional ability. Qualitative measures were captured in a semi-structured interview and explored what individuals found helpful about the new social support group and if there were any areas that needed improvement.

Results: The outcomes of the quantitative measures are presented, along with a summary of the qualitative measures which

indicate that families have found the group useful.

Conclusion: The environment – both physical and emotional and activities offered, aided in triggering memories with attendees looking forward to attending and feeling as though they had been able to make new friends with others who were experiencing similar life events. The overall experience was one of enhanced well-being.

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Subjective fatigue is associated with cognitive performance in people with traumatic brain injury

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Background and aims: Fatigue may negatively affect cognitive performance in people with traumatic brain injury (pwTBI). However, whether all cognitive domains are equally associated with fatigue in pwTBI requires further investigation. This study therefore examined which cognitive functions are most vulnerable to fatigue in pwTBI and compared these associations to controls.

Methods: pwTBI (N=58) and healthy controls (N=37) reported their general fatigue levels (Fatigue Severity Scale) and completed four cognitive tasks measuring processing speed and attention (symbol digit modality task; SDMT), verbal fluency (controlled word association task; COWAT), inhibition (STROOP), and short term and working memory (digit span forward; DS_FW and

backward; DS_BW). Pearson correlation analyses were used to assess the correlation between fatigue and the cognitive tasks for the TBI and control group separately (analyses were corrected for multiple comparisons).

Results: There was a moderate to strong negative correlation between fatigue and the SDMT ($r = -.47, p < .001$) and fatigue and the DS_BW ($r = -.44, p = .001$) in pwTBI. Controlling for time since injury and injury severity did not affect this association. There was no significant correlation between fatigue and the DS_FW, COWAT, and STROOP in pwTBI. In the control group there were no significant correlations between fatigue and any of the cognitive tasks.

Conclusion: This study indicates that higher levels of fatigue are associated with worse performance on cognitive tasks assessing working memory and processing speed in pwTBI specifically. Thus, these tasks might be more vulnerable to fatigue. Therefore, it could be important to take fatigue into account when assessing cognitive functioning in pwTBI.

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Coping after acquired brain injury: Insights from interpretative phenomenological analysis of dyadic case studies and the influence of changes to coping styles on family adjustment

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Background and aims: After an acquired brain injury (ABI), there seems to be variability among families as to the level of adjustment they reach. Research has suggested that the severity of the injury has little influence on how well a family adapts to life after ABI. The ways people cope after ABI has received much attention in the literature, with the aim of identifying the most effective strategies. However, the lived experience of the impact of ABI on coping styles and specific responses to ABI stressors has not been addressed from a dyadic perspective. This study addresses the gap in the literature by investigating the connections between family members when

coping is changed as a result of ABI, and how this may relate to overall adjustment in families.

Method: Interpretative phenomenological analysis was conducted on the transcripts of semi-structured interviews for 3 dyadic pairs: An individual with ABI and their spouse, an individual with ABI and their parent, and an individual with ABI and their sibling. All participants answered the same questions relating to their general coping styles, changes to coping as a result of ABI, specific ways of coping with ABI stressors, and how adjusted they felt to living with ABI.

Results: Limitations to coping skills cause issues with long term adjustment for individuals with ABI, and family members develop internalised coping methods to protect the individual with ABI. How these factors are contributing to family adjustment are presented with a discussion about areas for research and interventions going forward. Specifically, the influence of the cognitive deficits on coping abilities plays a key role in how individuals with ABI cope with their injury. Family members' show a tendency to take on coping 'responsibilities' in an attempt to keep harmony within the family relationships. Dyadic coping themes are presented to discuss the changes to unique family units as experienced by the individuals within those relationships, and how they represent their feeling of coping with and adjustment to ABI.

Conclusions: We can learn as much from adjusted families as we can those who are struggling to adjust to ABI. Cognitive limitations from ABI that interfere with pre-existing coping abilities may be of particular concern in terms of long-term coping strategy development. Family members are at risk of hiding their difficulties and becoming isolated within their families as their coping strategies become more internalised

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The Efficacy of Errorless Learning and Goal Management Training in Parkinson's Disease, GoMaP Study

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Objective: Individuals with Parkinson's disease (PD) often experience difficulties with planning skills and goal directed behavior. Goal management training (GMT) is a successful treatment for these deficits and helps to structure activities in daily life. The acquisition of the GMT strategy and its application in everyday tasks, however, relies on self-control and error monitoring, which are impaired in many patients with executive problems. Consequently, errors that occur during standard trial-and-error learning may not be detected or corrected and may interfere with the correct application of the GMT algorithm. Previous research has shown that preventing errors during learning, also known as errorless learning (EL), enhances GMT treatment effects in stroke and traumatic brain injury. Our primary objective is to examine the efficacy of a combined Errorless Learning and Goal Management Training intervention for treatment of cognitive complaints in Parkinson's disease. In addition, we will gain more insight into the underlying mechanisms of EL. In order to do so, we will also include a healthy control group.

Participants and Methods: In this assessor-blind randomized controlled trial, 52 PD patients will be recruited. Participants will be randomly allocated to the combined errorless learning GMT or conventional GMT (using trial-and-error learning). Both treatment arms consist of 8 sessions in which two self-chosen IADL tasks that rely on executive functioning are (re)learned. Task

performance will be measured at baseline, post-treatment and at follow-up with a standardized scale evaluating competent, ineffective, and missing task steps. Besides a neuropsychological assessment, secondary outcome measures are subjective experience of executive deficits measured with the BRIEF-A and Goal Attainment Scaling (GAS). Health-related quality of life is measured by the Parkinson's Disease Questionnaire (PDQ-39). In a healthy control group, a shortened neuropsychological assessment is administered at baseline and at follow-up.

Conclusions: In summary, the aim of this ongoing study is to examine the feasibility and efficacy of a combined EL-GMT program that can be used in PD neuropsychological rehabilitation practice. This study will contribute to improved treatment of executive deficits and an improved everyday functioning in persons with PD and to a better understanding of the underlying mechanisms of errorless learning.

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Using the Health Belief Model to explore factors that impact adherence behaviour in parents and teachers after child concussion

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Background and Objectives: Concussion is a type of traumatic brain injury (TBI) that is common in children and adolescents. Each year, 1.4 million people in England and Wales attend A & E departments with a head injury and between 33 and 50% of those are children aged 15 or under. Usually, symptoms of concussion resolve without the need for intervention, but some may experience Persistent Post-Concussion Symptoms (PPCS) for many months or even years. Current concussion management guidance for children suggests an initial rest period of

24-48 hours followed by a gradual return to activity. If concussion guidelines are not followed, then children may return to situations where they are not physically or cognitively ready and may put themselves at risk of a second head injury or experience PPCS. Parents and teachers are in a position of responsibility over a child's wellbeing and therefore, it is important to understand their likelihood to adhere to implementing guidance. This study applied the Health Belief Model to examine what factors may predict their likely adherence to concussion guidelines.

Method: This study was a quantitative, cross-sectional survey design and recruited parents and teachers via convenience sampling. A survey was developed with Public and Patient Involvement (PPI) and included a measure of knowledge of acute concussion, PPCS and return to 'normality' guidelines, a measure of concussion perceptions as described in the health belief model (perceived barriers, benefits, severity, susceptibility, self-efficacy and cues to action), and a measure to assess likely adherence to concussion guidelines by parents and teachers.

Results: A survey was completed by 144 parents and 44 teachers which showed that a sample of mostly white, well-educated, female participants had good knowledge of acute concussion symptoms and PPCS, but less knowledge for the recommended guidance that should be followed. Perceived barriers ($\beta = 0.459$), perceived susceptibility ($\beta = 0.536$) and concussion knowledge ($\beta = 0.601$) were found to be predictive of likely adherence by parents.

Conclusions: These findings extend previous research that has focused on sports-related concussion and non-UK samples and highlight areas where educational resources, guidelines and support can be modified to increase likely adherence, in turn improving the outcomes for children who experience concussion. Future research should aim to recruit a larger sample of teachers to determine predictors of their likely adherence, improve diversity of the recruited sample and consider the application of other health models to understanding this health behaviour.

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Psychological Interventions for Children Following Concussion: A Systematic Review

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Background and Objectives: Concussion is a type of traumatic brain injury (TBI) that is common in children and adolescents. Each year, 1.4 million people in England and Wales attend A & E departments with a head injury and between 33 and 50% of those are children aged 15 or under. Usually, symptoms of concussion resolve without the need for intervention, but some may experience Persistent Post-Concussion Symptoms (PPCS) for many months or even years. One way to understand PPCS is to consider it as a combination of physical and psychological variables and therefore, treatment for PPCS should aim to target both physical and psychological symptoms. This systematic review explores psychological interventions for Persistent Post-Concussion Symptoms (PPCS) in children.

Method: Literature published until July 2021 was retrieved from MEDLINE, PsycINFO, Web of Science, NeuroBITE and CINAHL. Inclusion criteria were (1) sample with a mean age under 19 and PPCS (2) studies exploring psychological intervention or multimodal interventions that include a psychological component to treatment (4) any study design except single case (5) a measure of at least one of the following: PPCS, Quality of Life (QOL), anxiety or depression. Risk of bias was assessed using NHLBI quality tools. A narrative synthesis of results is presented.

Results: Twenty-one articles met the inclusion criteria. Only eleven studies were of good quality and low risk of bias. Interventions were highly heterogeneous but typically included one or more of the following: psychoeducation, neuropsychological assessment, psychological therapy, or psychological skills-based exercises. Improvements in PPCS and QOL were evidenced across studies however, due to a variety of methodological limitations, these findings must be understood tentatively.

Conclusions: In the context of the literature which is limited and of low quality, CBT, psychoeducation, and multimodal treatments show the best promise of improvements in PPCS and QOL. Research on psychological interventions for children with PPCS is in its infancy and there are significant gaps that warrant further research to develop meaningful recommendations for treatment.

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Key themes of identity intervention for young people following a brain injury

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Background and objectives: Identity is a key developmental process for young people (Erikson, 1968). It is identified as a common area of difficulty following a life changing injury, such as a brain injury (Ownsworth, 2014). Individuals face challenges in understanding and redefining who they are and adjusting past aspects of identity (Ylvisaker & Feeney, 2012). However, there is scant published literature involving the child and adolescent population. The objective of this review is to identify key themes of intervention in published research that describe identity work in young people following a brain injury.

Method: A literature search was conducted in three databases using keywords: identity, sense of self, self, brain injury, disability, children, adolescents, young adults, patients, paediatric neurorehabilitation. Data selection was described using PRISMA. Each paper was

screened by one reviewer focusing on title and abstract and full text. The Critical Appraisal Skills Programme (CASP) tool was used to assess the quality of the research. Line by line coding was completed by two reviewers as the basis of the thematic analysis of the intervention.

Results: The thematic analysis identified seven themes within interventions for young people to describe identity work following a brain injury. These included: promoting a sense of normality and group belonging, intervention to support executive function and motivation, use of narrative therapy to redefine sense of self, reducing self-stigmatization, ensuring maximum therapeutic engagement with services, reinforcing a sense of agency, and promoting hope in the future.

Conclusions: Young people present with identity difficulties following a brain injury. There is a need for intervention to support the process of adjustment and adaptation. This can be achieved through the key themes of intervention proposed in this paper. An evidence-base for young people with a brain injury is required to apply these findings with confidence.

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Carer's Count

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Background and Objectives: We wish to understand the impact that caring for someone with aphasia has, and also to quantify and qualify the effects of a 12-week intervention programme on this. More than 50% of stroke survivors depend on their spouses and family members to support their everyday activities and emotional health concerns. This has ramifications for the carers, including causing emotional distress, family disruptions, changes of role, being unable to mourn the loss of the pre-morbid loved one, loss of their pre-morbid self and feeling burdened. This burden can be alleviated -not

by changing the carer's circumstances- but by altering the carer's perception of burden and increasing their understanding and acceptance (Klonoff, 2010). A recent systematic review of psychological interventions of stroke carers found significant improvements in depression, anxiety, well-being and strain when delivered by a psychologist (Panzeri, 2019).

Methods: The Intensive Comprehensive Aphasia Programme (ICAP) at Queen Square is a four-week programme for people with aphasia (PWA). As part of the programme, a Clinical Psychologist runs a carer support group for the duration of the ICAP plus follow up groups (online) when the ICAP finishes. The carers are invited to attend 3 sessions within the ICAP and 5 sessions post-ICAP (8 in total) and follow an Acceptance and Commitment based approach.

We collect measures of mood, carer burden, quality of life and self-efficacy pre- and post-the carers' intervention. Notes are taken during the café and are themed at the end of the group session.

Results: Carers experience high levels of burden causing mild-moderate levels of depression and anxiety. Quantitative data will be presented at the conference from ~20 participants. The qualitative themes identified thus far include increased isolation, hypervigilance, letting down the struggle, self-care, loss of identity and on-going medical impact.

Conclusions: There is a huge burden of care and responsibility that falls on carers, particularly those caring for PWA. Carers often feel alone, isolated and believe no one really understands them. They benefit from these feelings being validated and by experiencing a targeted intervention. We will present data to resolve whether an eight-session psychotherapeutic group intervention using Acceptance and Commitment therapy can improve quality of life and reduce carer burden.

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Exploring the efficacy of Remote Neurocognitive Rehabilitation in a case study of Acquired Brain Injury

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Background and objectives: COVID-19 came to enlighten the relevance of remote-delivered mental health services not only in a context of crisis, but also in cases where the geographical distance is an obstacle to access those services. Due to the restraining measures associated with the global pandemic, neuropsychologists from all over the world made a significant effort on using new digital technologies to provide entirely remote services, namely of cognitive rehabilitation. This work focused on exploring the efficacy of a fully remote-delivered neurocognitive rehabilitation program (rd-NRP) in a case study of Acquired Brain Injury.

Method: A case-study method was implemented. A woman (A.) with 31 years old, who had suffered an ischemic stroke 6 months prior to her enrollment in the NRP, was invited to participate in a totally rd-NRP. A 12-week rd-NRP, with three sessions per week of approximately 40 minutes, was delivered through an online platform. A multidomain neuropsychological assessment was performed before and after the intervention, focused on the overall cognitive functioning, memory, attention, executive functioning, emotional status, and quality of life (QoL). Additionally, a brief interview was conducted after the rd-NRP regarding both the cognitive rehabilitation process and platform.

Results: The results showed, in general, improvements across all areas. Larger

improvements were found in anxiety, depression, and QoL. In the interview, A. reported a positive experience with the rd-NRP, recognizing its importance for her recovery and enlighten as the main advantages the schedule and geographic flexibility. Although the physical distance from the neuropsychologist was reported as a least positive aspect, A. stated that she would not change anything to the rehabilitation process, as she was able to easily engage in it.

Conclusion: This case study seems to reveal the importance and efficacy of totally rd-NRP.

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Validation of Addenbrooke's Cognitive Examination – III for Administration Via Telehealth

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Background: Cognitive screening tools are routinely utilised to detect mild cognitive impairment. Many assessment tools have been validated for telehealth administration; however, they lack sensitivity to discriminate mild cognitive impairment and differential diagnoses.

Objective: The present study aimed to determine the validity and feasibility of administering a more sensitive tool, the Addenbrooke's Cognitive Examination – III (ACE-III), via telehealth.

Method: A simultaneous assessment design was used. Seventeen healthy adults were administered the ACE-III in-person or via telehealth by a lead assessor. A second assessor observed administration in the alternative environment and independently scored performance. Validity was determined using percent exact and percent close agreement analyses, Bland and Altman analysis, and paired samples *t*-test. Feasibility was explored through observation and review of assessor field notes.

Results: There was equivalence between the telehealth and in-person assessments for total ACE-III score. The visuospatial domain demonstrated a lack of agreement between assessment modes for one participant. All items in the telehealth environment were successfully administered, with only minor technical difficulties.

Conclusions: Findings of the study provide preliminary evidence for the validity and feasibility of a telehealth administration of the ACE-III. However, further research into the feasibility of administering the tool with a neurological population is required.

Consideration should be given to participants' confidence and familiarity with technology, in addition to the availability of reliable internet connections, when translating findings into clinical practice.

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AppReminders – A pilot feasibility randomised controlled trial of a memory aid app for people with acquired brain injury

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Background and Aims: Mobile phone reminding apps can be used by people with acquired brain injury (ABI) to compensate for their memory impairments. However off-the-shelf apps may be difficult to use. AppITree has been developed to be accessible to this group, compared to off-the-shelf reminding apps such as Google Calendar. This pilot feasibility trial aimed to establish the

feasibility of running (and issues that should be addressed to complete) a randomised controlled trial comparing ApplTree to Google Calendar in an ABI community treatment setting.

Method: Adults with self or other reported memory difficulty after an ABI were enrolled (n=39). Those who completed the baseline phase were randomised (n=29) and randomly allocated to the Google Calendar or ApplTree intervention. They were shown a 30 minute video tutorial of the app and an assessment on their ability to use it. Timely completion of everyday memory tasks were measured for a 3 week pre-intervention baseline and 3 week post-intervention follow-up phase. Participants also completed neuropsychological tests assessing memory, attention and executive function and gave qualitative feedback on the app and their experience in the trial.

Results: Recruitment rate was 58% of the target (29 were randomised, n=50 was the target in 2 years). Retention rate was 65.5% and adherence rate was 57.9%. While the feasibility trial was not powered to calculate efficacy, there was a 13% increase in everyday memory tasks completed on time for those in the ApplTree group (n=10) compared to baseline and no change for the Google Calendar group (n=9). Feasibility results indicate 72 participants would need to fully complete a trial to demonstrate the minimally clinically important difference in the efficacy of ApplTree compared to Google Calendar, should such a difference exist.

Conclusions: The challenges with recruitment of people receiving community care for ABI are highlighted in this trial and discussed along with the impact of the Covid-19 pandemic. Methodological considerations for researchers or clinicians looking to measure everyday memory ability are discussed. The majority (19 of 21) of participants who were given an app were capable of learning to use it during an hour-long session. This indicates it is a feasible intervention that community ABI services could offer. Participant feedback highlighted the merits of design features implemented in ApplTree that can improve the uptake and utility of reminding apps.

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Treatment of posttraumatic stress symptoms with EMDR in a patient with aphasia after stroke: A case report

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Background and objectives: Posttraumatic stress disorder (PTSD) is highly prevalent in patients with acquired brain injury (ABI). Eye Movement Desensitization and Reprocessing (EMDR) is an effective treatment for posttraumatic stress symptoms. However, empirical research on the applicability and effectiveness of EMDR in patients with ABI, and more specifically in patients with aphasia after ABI, in which the applicability of EMDR may be extra challenging, is scarce.

Method: This case study describes how EMDR was used in the treatment of chronic posttraumatic stress symptoms with intrusions of repeated verbal abuse and emotional neglect during childhood in a 55-year-old female with aphasia after a stroke, 10 years before. All DSM-5 criteria for PTSD were fulfilled, except criterion A, due to the nature of the events. Self-confidence was self-rated on a Visual Analogue Scale (0-10) pre- and posttreatment. During treatment the Subjective Units of Disturbance (SUD), the intensity of distress experienced while thinking of a traumatic memory, was repeatedly measured on a Visual Analogue Scale (0-10). Posttreatment the patient and spouse were asked about the burden of intrusions, difficulties sleeping and mood at the time and this was repeated at follow-up after a year. Adjustments in the EMDR standard protocol are elucidated.

Results: The intervention consisted of three EMDR sessions treating three traumatic target memories. Because of severe difficulties in expressing language, the spouse was involved in treatment and measurements, and elements of the 'Storytelling' and 'Blind to therapist' methods of EMDR were used in addition to the standard protocol. The SUD's of the traumatic memories were 8 or 9 at the start of treatment, and 0 or 1 at the end. Self-confidence was rated as 3 pretreatment and as 7 posttreatment. After completing EMDR, the patient reported having no more intrusions and difficulty sleeping and improvements in mood, congruent with observations of the spouse. These improvements were maintained after a year.

Conclusions: Findings show the possibilities for EMDR in patients with acquired brain injury and aphasia, and encourage further investigation into the application of EMDR for treating symptoms of posttraumatic stress in this population.

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Smartwatch reminders effectively aid prospective memory in Korsakoff's syndrome

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Background and aims: Korsakoff's syndrome (KS) is a neuropsychiatric disorder caused by severe malnutrition, often as a consequence of chronic alcohol abuse. KS patients typically show severe impairments in prospective memory (PM), since their ability to perform delayed intentions is compromised. In a clinical setting, KS patients frequently require verbal reminders. Two case series investigated

the possible benefits of a smartwatch aid for PM tasks in patients with KS and compared its efficacy with verbal in-person reminders.

Method: A single case study and three follow-up case studies investigated whether KS patients could remember novel and regular PM tasks based on smartwatch and verbal reminders.

Results: The results highlight the great potential of using smartwatches as external memory aids in KS patients in everyday life and novel situations. The smartwatch was as effective as verbal reminders for novel and everyday tasks.

Conclusions: External memory aids can successfully support PM in KS.

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Health problems and care needs in patients with Korsakoff's syndrome: a systematic review

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Background and Objectives: The literature shows that Korsakoff's syndrome is associated with a wide range of severe comorbid somatic and psychiatric health problems that lead to care needs in several domains of functioning. The objective was to provide a comprehensive overview of Korsakoff patients' health conditions and related care needs.

Method: Following the PRISMA guidelines, we searched MedLine, PsycInfo, Cochrane Library and CINAHL up to January 2019. After applying our inclusion criteria, two reviewers independently selected the studies, extracted the data, and assessed methodological quality.

Results: Twelve articles were included. The commonest somatic comorbid conditions were liver disease, cardiovascular disease, COPD and diabetes mellitus. The commonest psychiatric comorbid conditions were mood disorder, personality disorder and psychotic disorder. Anxiety, aggressive/agitated behaviour, depressive symptoms and care needs in social functioning and (instrumental) activities of daily living were also very commonly reported.

Conclusions: In patients with Korsakoff's syndrome, somatic and psychiatric comorbid conditions co-occur with behavioural and functional problems. They are compounded by patients' poor self-awareness regarding their health status and functioning. Adequate responses to their care needs require high-quality integrated care. Patients with Korsakoff's syndrome should receive integrated care based on accurate multidimensional and multidisciplinary diagnostics in which nurses have a prominent role.

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Posters : Thursday

Patient involvement in the design of an interventional psycho-educational group aimed at improving outcomes for survivors of sudden cardiac arrest

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Background and Objectives: Survivors of sudden cardiac arrest in the UK have described difficulty transitioning to a 'new normal' after leaving hospital, citing cognitive, psychological and physical challenges (Mion et al, 2021). To explore how outcomes could be improved, Resuscitation Council (UK) has

granted funding to deliver an online psycho-educational group for out-of-hospital cardiac arrest survivors and their families as part of a randomised controlled trial (RCT). The objective of the current research was therefore to determine how to deliver this group to best meet the needs of the survivor and co-survivor cohorts attending.

Methods: Involving survivors and their families in the development of the group was a key element of the study design. Participants were recruited via the Sudden Cardiac Arrest UK online forum and views were sought using an exploratory sequential mixed-method design with two stages:

1. Two 90-minute semi-structured focus groups were conducted online – one with survivors (n = 5) and another with family members (n = 3). Questions focused on understanding views on structure, content, and facilitator based on their own experiences. Data was analysed using thematic analysis and three superordinate themes and 10 subthemes were identified. Member-checking was used to verify credibility of the findings.
2. Stage two: Themes from stage one were used to create survey items and options that could be sent to a bigger sample of participants (n = 93) to establish whether the focus group findings were representative of a larger population of survivors (n = 62) and their families (n = 31).

Results: Findings from both stages were largely consistent, providing practical guidance on: preferred timing (2-4 weeks after leaving hospital), structure (ideally four sessions, lasting one hour each), content (focus to be on providing education to help understand cardiac arrest and potential cognitive and psychological challenges), format (50/50 split between presentation and questions with a one-page summary to avoid overwhelming amounts of information) and facilitator (ideally a medical professional who can be present each week).

Conclusions: The findings are now being used to create a template for running the group

and accompanying psycho-educational materials. Once complete, the next stage will be to deliver the RCT and measure outcomes to assess the efficacy of the proposed intervention.

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Cognitive flexibility: Trail Making Test and Five Digit Test equivalence.

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Background and Objectives: Cognitive flexibility is a process of controlled attention that allows us to adapt our behavior in dynamic environments. The Trail Making Test and the Five Digit Test (FDT) have been postulated as benchmark tests in the assessment of processing speed and cognitive flexibility. The following derived scores have been proposed in previous studies to measure cognitive flexibility: TMT/flexibility [TMTb – TMTa] and FDT/flexibility index [Switching – Reading]. However, in our clinical experience we have the impression that both tests offer too different results. This study examines the equivalence between the two tests in a group of 30 healthy, highly educated, Spanish-speaking participants.

Method: 80% of participants were women, 87% right-handed. The mean age was 37 years (SD=11,6). Significant differences were only found according to age in both tests. The TMT test was administered first and the FDT second to all participants. Correlations between the tests were analyzed and Bland and Altman plots were made for the comparison of TMT/flexibility and FDT/flexibility index.

Results: No significant correlation was found between the speed scores: TMTa - FDT/reading ($r=.07$, $p=.72$) and TMTa - FDT/counting ($r=.03$, $p=.9$); nor flexibility: TMTb – FDT/switching ($r=.32$, $p=.09$), and

TMT/flexibility – FDT/flexibility index ($r=.13$, $p=.5$).

Conclusions: TMT and FDT do not seem to be comparable tests for the measurement of processing speed or cognitive flexibility. It is possible that psychomotor speed and visual tracking are processes with greater weight in the TMT than in the FDT, marking a notable difference in the scores of processing speed and cognitive flexibility even in healthy people. The development of purer tests of the attentional processes is necessary, taking into account the sensory modality, degree of difficulty and type of response requested.

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Mental fatigue after traumatic brain injury: different determinants across the severity spectrum

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Objective: Fatigue is a frequent complaint after traumatic brain injury (TBI), irrespective of severity. We aimed to identify factors that contribute to mental fatigue in various severities of TBI by investigating the influence of impaired information processing, mental distress and coping styles.

Method: In a retrospective chart review study, patients with mild ($n=56$), and moderate-severe TBI ($n=25$) were included, as well as a group of healthy controls (HCs; $n=30$). Neuropsychological assessment in the sub-acute to chronic phase after injury consisted of tests requiring information processing speed and questionnaires for fatigue, anxiety, depression and coping styles.

Results: In the moderate-severe TBI group, worse performances on three measures for basic and complex information processing speed were significantly correlated with

higher levels of subjectively reported mental fatigue (correlations ranging from .40 to .50), but not to physical fatigue. In the mild TBI group, information processing speed and mental fatigue were not significantly related. However, presence of anxiety, depression and use of passive coping did significantly positively correlate with mental fatigue in this group (correlations ranging from .39 to .53).

Conclusions: Important differences in determinants of mental fatigue across the TBI-severity spectrum exist. Slower information processing in moderate-severe TBI is likely to pose a higher cognitive load in demanding (task)situations, which in turn relates to higher levels of mental fatigue. In contrast, reported mental fatigue in case of mild TBI appears strongly associated with mental distress and passive coping. These findings provide different targets for treatment when severity of injury is taken into account.

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Current practice and views of Dutch speech pathologists regarding friendships after brain injury

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Background and Objectives: Consequences of acquired brain injury (ABI), including social communication problems, negatively affect friendships. Although the integral role of speech pathologists is becoming increasingly evident, current speech pathology practices regarding friendships after ABI remain unknown. The aim of the study was to evaluate current practice and views of Dutch speech pathologists regarding friendships after ABI.

Method: Survey study on whether, why and how speech pathologists do (not) perform work on friendships after ABI.

Results: Up to 90% of the 36 speech pathologists believes that work related to friendships after ABI falls within the scope of their responsibilities. 78% of the speech pathologists actually performs such work activities. There is also room for improvement. The most frequently mentioned facilitating factor in activities regarding friendship was the presence of supporting material, e.g. educational modules. The most commonly reported barriers were very limited social networks and persons with ABI choosing not to involve friends.

Conclusions: Work activities by speech pathologists regarding friendships after ABI are diverse and numerous. Speech pathologists are in need of material that can be used to support their work on friendships. Furthermore, reported barriers in working with friends may be explained by social communication problems. Results of the current study provide us with tool for future work on friendships after ABI.

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Improving relationships with others: A single case study

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Background: Social cognitive deficits are prevalent after traumatic brain injury (TBI). The participant of this single-case experimental design was 7 years old when he suffered a severe TBI. Now, after two years in rehabilitation, he continues to have several deficits in social cognition. **Aims:** Three objectives were set on the basis of specific deficits in their interactions with other people, (1) to learn to identify and define positive emotions, (2) reduce cognitive rigidity and (3) begin to interact with classmates.

Method: The design was "A-B-A and variant designs", including a minimum of nine data points. One different rehabilitation program was designed for each aim, with 10 sessions of 40 minutes each. The order and days of phase changes were randomized.

Data Analysis: Mann-Whitney test, baseline mean trend, and Chi-squared.

Results: In first aim, there was a significant change between phases 1-3 ($p < .001$) and 2-3 ($p = .010$) and the trend showed an improvement. Regarding the second goal, the χ^2 analysis shows a significant increase in positive emotions in phase 1-3 ($p = .003$) and phase 2-3 ($p < .001$). In terms of the third objective, there was a significant change in greeting initiatives between phases 1-2 ($p < .001$) and 2-3 ($p = .015$).

Conclusions: The participant has (1) improved the ability to recognise positive emotions and how he should express them, (2) significantly reduced his cognitive rigidity, allowing him to cope with changes in routine favourably and adapt better to unexpected situations, and (3) learned basic social rules, so when he sees his classmate or other children he knows how to interact. In summary, the results show that there has been a significant change in the child's daily life favouring his relationship with others.

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The assessment of low mood, distress and depression in people with very severe brain injury: a survey of UK clinicians

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Background and Objectives: Low mood, distress and depression after acquired brain injury are common. Most measures of depression involve self-report and require cognitive abilities such as reflecting on the past, comparing mood states and comprehending complex and often abstract concepts such as mood, time, intensity and normal versus abnormal. Responding to these measures may be extremely difficult for individuals with severe cognitive and communication difficulties following a brain injury. This study examined the current clinical practice of clinical psychologists when assessing this patient population.

Method: A qualitative online survey was disseminated via purposive sampling to UK based clinical psychologists with experience in working with patients with severe brain injury. Public email addresses for neurorehabilitation units, specialist care homes, professional bodies and special interest groups were used for recruitment. The survey explored which assessment procedures were being used, whether assessments were adapted for the patient population, and what symptoms psychologists are assessing.

Results: A total of 55 clinical psychologists completed the survey. All respondents affirmed that they assess mood after brain injury. 100% of respondents reported they ask others about the patient's mood, 96% reported they interview the patient, 87% observe the patient, 86% of respondents reported that they use standardized measures and 67% reported using other members of the team to help to assess and monitor mood. 84% of respondents reported they adapt the administration of standardized measures and 76% report they make adaptations to the way they interpret the score e.g. relying less on cut-offs or normative values to interpret results. The most common symptoms being assessed were changes in sleep, appetite,

tearfulness, withdrawal, grimacing and behavioural changes.

Conclusion: The majority of those surveyed report using standardised measures. Although they made use of measures, the majority also reported adapting the administration or the interpretation of the scores, thus altering the standardised validity of the measures. This survey highlights the need for a gold standard for how clinicians should assess mood in this population.

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Evaluation of a tablet-based cognitive training program in a patient with bilateral thalamic ischemic stroke

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Background and Objectives: Bilateral thalamic infarcts are often associated with significant impairments in learning abilities and explicit memory. Despite these cognitive deficits negative impact on individuals' functionality, severe memory deficits following thalamic stroke are not typically subject to interventions to ameliorate or compensate for their negative impact. Cognitive training (CT) interventions delivered through new technologies are promising solutions to

mitigate poststroke-related cognitive deficits. Recent approaches enable the incorporation of ecologically valid content within CT for facilitating the gains transfer (Faria et al., 2016, 2020).

Method: A 41-year-old female diagnosed with bilateral thalamic stroke in 2019, affecting the mammillothalamic tract, was submitted to a neuropsychological assessment (NA) before and after the intervention. She was enrolled in a one-month intervention with the NeuroAlreh@b platform, involving eight 45 minutes CT sessions. The platform enables participants to perform different types of cognitive tasks based on Instrumental Activities of Daily Living (IADLs) (e.g., selecting the correct ingredients for a given recipe, paying for groceries in the supermarket, and organizing the kitchen after preparing a meal) with task parameters being adapted to the neuropsychological profile of the patient at baseline. After the eight sessions, we compared the patient's pre- and post-neuropsychological assessment results.

Results: At post-intervention, the patient presented substantial improvements in many cognitive functions, namely in processing speed (Digit-symbol Coding) and verbal fluency (Semantic). Additionally, despite the persistent deficits in verbal and visual learning and memory, the patient benefited from cues in the verbal memory tasks (Free and Cued Selective Reminding Test), revealing higher levels of familiarity-based performance and increased performance in the guided delayed recall trial. Finally, she improved on executive functions measures, namely planning and inhibition (Frontal Assessment Battery), and revealed greater perceived self-efficacy.

Conclusions: This single-case study demonstrated an evolution in learning abilities and the ability to compensate for memory deficits with appropriate cues provided by a personalized CT program. Future studies should increase the CT period and provide follow-up data regarding the long-term impact of digital tablet-based CT on ADLs.

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Using the cognitive-behavioural model to explore emotional adjustment after encephalitis as told through podcasts in the public domain: A qualitative study

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Background: Encephalitis is a relatively rare type of acquired brain injury (ABI) that can cause a host of debilitating neurological, cognitive, and psychiatric symptoms. Emotional adjustment after ABI, particularly post-encephalitis, has been given little attention in the literature but is immensely important to ensure positive, long-term outcomes. The transdiagnostic cognitive behavioural (TCB) model offers a way of understanding encephalitis survivors' experiences of emotional adjustment but has not yet been tested.

Aims: To qualitatively assess whether the TCB model of emotional adjustment post-ABI accurately captures the experiences of recovery in encephalitis survivors. A secondary aim was to assess whether these experiences differed between viral and autoimmune encephalitis.

Method: Framework analysis, based on the principles of thematic analysis, was used to build a deductive coding framework from the TCB model which was applied to the spoken experiences of encephalitis survivors (n=15) as told through podcasts that were gathered from the public domain. Inductive coding was also used throughout the analysis process to record ideas that did not fit within the TCB model framework.

Results: The TCB model was able to provide a broad picture of encephalitis survivors' experiences of emotional adjustment during recovery, although analysis was able to reveal greater detail regarding how survivors experienced the factors of the TCB model, including the types of threats to their self-identity they experienced, how they responded emotionally and behaviourally to these threats, and the contextual factors influencing these processes. No discernible

pattern was found to differentiate the experiences of survivors with viral encephalitis (n=6) compared to autoimmune encephalitis (n=5), although some issues with data saturation and the inconsistent length of podcasts may have influenced this finding.

Conclusions: Overall, these findings show that the TCB model can accurately reflect the recovery experiences of encephalitis survivors in terms of emotional adjustment, providing support for the exploration of psychological therapies like CBT as treatment for issues with emotional adjustment post-encephalitis.

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Too hard to assess?: Complex cognitive assessment using the right toe

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Background and Objectives: It is hard to neuropsychologically assess people with Dyskinetic Athetoid Cerebral Palsy (DCP) and severe motor and communication impairments. Without assessment, there is a risk of underestimation in cognitive functioning, a failure to personalise support and a focus on behavioural issues without an understanding of contributory cognitive factors. Decisions about using standardised measures but modifying administration in line with abilities needs to be made. Whilst this limits validity of comparisons with test reference groups, it enables structured exploration of the individual's unique profile and showcases strengths.

Method: A 19-year-old woman with DCP and previous multiple Deep Brain Stimulation (DBS) was neuropsychologically assessed using modifications to standardised measures. She only has voluntary control over her right foot and eyes. Modifications to administration of the WAIS-IV^{UK}, WMS-IV^{UK}, D-KEFS^{UK}, Hayling and Brixton Test, D-KEFS^{UK}, RBANS Update^{UK}, ACE-III, TOMM and TASIT-S are discussed.

Results: The contribution of test modifications, dual-task conditions and disruptions to acquisition of cognition through life were considered in interpretation. Findings included acceptable performance validity, relative strengths in verbal and visual

reasoning skills, working memory, inhibitory control, visuospatial planning, naming and rudimentary visuospatial and perceptual skills and emotional expression recognition. There was evidence of perseveration and impairments in verbal memory and understanding of sarcasm.

Conclusions: A range of strengths in cognitive functioning and areas of greatest need were identified. This means that at a key life stage of transition to adulthood, her voice in directing her care and involvement in decision-making about her life can be maximised. Decisions include future DBS surgery, using social media safely, selecting her own care team and where she will live.

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Brain Outcome After Cardiac Arrest- Single Case Experimental Design Intervention Study

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Background and Objectives: The survival rate of out-of-hospital cardiac arrest (OHCA) patients has increased over the past decades.

This gives rise to a growing number of patients with hypoxic-ischemic brain damage and cognitive impairment. Currently, there is a lack of knowledge regarding effectiveness of treatments to improve outcomes of patients with cognitive impairment after a cardiac arrest. The primary objective is to test effectiveness of cognitive rehabilitation therapy to improve functioning on problematic well-defined personalized behaviour that is caused by an objective cognitive impairments after OHCA.

Methods: This is a randomized multiple baseline single case experimental design (SCED) intervention study. Four patients who survived a cardiac arrest and with cognitive impairments will be included in this study. There will be a baseline phase, an intervention phase, and a follow-up phase. The intervention will consist of a combination of direct training of the impaired cognitive function(s) and metacognitive strategy training for 42 days (6 weeks). Direct training will be done with the computer program Rehacom to train the impaired cognitive domains, for 20 minutes 5 times a week. Metacognitive strategy training will be given on a weekly or biweekly basis (6-10 sessions) by a trained therapist as current care. The subjective personalised cognitive problem will be measured daily via the app M-path. We will also measure objective- and subjective cognitive functioning with neuropsychological tests and questionnaires respectively. An MRI-scan (DTI) will be done before and after the intervention to explore the relationship between baseline structural brain integrity and cognitive recovery.

(Expected) Results: It is expected that during the baseline period, the objective and subjective problems with cognition remain stable. When the intervention has started, we expect to start seeing a decrease in the subjective daily problems, and the objective and subjective measures. We hope to see that these improvements are maintained during the follow-up period of 3 months. We expect to see a correlation between improvements in cognitive functioning in structural or functional connectivity between brain areas.

(Expected) Conclusion: We expect that the combination of direct training and metacognitive strategy training will improve cognitive functioning of patients with cognitive impairment after OHCA.

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Emotion perception in traumatic brain injury: an exploratory eye tracking study

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Background and Objectives: After moderate to severe traumatic brain injury (TBI) impairments in recognizing facial emotional expressions are common. However, little is known about the visual scanning pattern of these patients when perceiving emotions. The aim of this study was to explore the visual scanning pattern of RS, a patient with traumatic brain injury suffering from deficits in social cognition. RS was tested before and after a social cognition treatment (T-ScEmo: Treatment of Social Cognition and Emotion regulation) in which – among other aspects – strategies for emotion perception were taught.

Method: RS (38 year old, male, bifrontal contusion, tested 8 months post-trauma) completed neuropsychological tasks including measures for emotion perception, before and after treatment. Eye-tracking was used to monitor scanning behavior of RS while looking at faces depicting basic (anger, disgust, fear, happiness, sadness, surprise, neutral)² and complex (embarrassment, contempt)³ emotional expressions.

Results: After treatment RS demonstrated increased attention allocation toward emotional facial cues. Table 1 shows that in general the total mean fixation time spend on the regions of interest [eyes and mouth]

increased, while his emotion perception had improved.

Conclusions: This exploratory data suggest a relation between the visual scanning pattern of emotional faces and emotion perception. Therefore, strategy training with regard to facial-feature processing might be helpful for adequate emotion perception.

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Effectiveness of interventions addressing social connection and isolation for people with acquired brain injury: a systematic review

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Background and Objectives: Social isolation is a common consequence of acquired brain injury (ABI) and can have long-term negative effects on individuals' physical and mental health. This systematic review aims to identify interventions addressing social isolation and/or social connection for people living with ABI, detail the key elements of these interventions and synthesise their effectiveness.

Method: Four databases (PsycINFO, MEDLINE, CINAHL, EMBASE) were systematically searched using terms relating to 'brain injury' and 'social isolation' and relevant MeSH terms. Articles were screened based on predefined eligibility criteria to determine inclusion; quality/risk of bias assessment was carried out for all included articles; elements

of interventions were identified based on the Template for Intervention Description and Replication (TIDieR) checklist and the interventions' effectiveness was synthesised narratively.

Results: Eleven intervention studies were included. Not all interventions reported on all eleven elements of the TIDieR checklist. Six of the eleven reviewed interventions showed some statistical difference or small effect size on measures assessing constructs related to social isolation or connectedness. Interventions, study designs and quality of studies varied.

Conclusions: Variable study quality and intervention types made it difficult to draw firm conclusions about the effectiveness of the interventions. Results from this systematic review suggest that social support intervention could be effective in addressing social isolation/connection. More research is needed to develop interventions addressing social isolation and to evaluate their effectiveness.

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**“My connections are stronger with people”:
A grounded theory exploration of
stakeholder perspectives on successful social
connection after acquired brain injury (ABI)**

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Background and Objectives: Individuals living with acquired brain injury (ABI) often have poor psychosocial outcomes, including feeling socially isolated. The study aims to develop our understanding of key processes involved and practices used by individuals living with ABI, family members/carers and community ABI support people to maintain and/or develop social connectedness.

Method: Six focus groups involving 23 individuals drawn from those living with ABI, family members/carers and community ABI support people were conducted. Processes and practices were explored using Grounded Theory and findings were presented in a model.

Results: Four interlinked processes were identified to be involved in developing and/or maintaining social connectedness: understanding of oneself and from others, acceptance of oneself and from others, rebuilding confidence and creating safe spaces. Practices used slightly differed both within and between participant groups.

Conclusions: The study proposes a framework of processes underpinning the development and/or maintenance of social connection, alongside current practices, which can be used to guide clinical practice.

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**Employing a positive behaviour support
approach on a Neuro-behavioural ward: an
audit of patient demographics and outcomes**
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Background and Objectives: The Neuro-Rehabilitation Unit (NRU) within The Royal Hospital for Neuro-disability (RHN) admits adults who have an acquired brain injury (ABI) and present with challenging behaviour. The NRU uses a Positive Behaviour Support (PBS) approach as its ethos. Using

proactive behaviour management strategies to help an individual communicate a message in a different, more adaptive way. With the overarching aim of optimising quality of life. Outcomes measures are completed on admission and discharge for each patient to assess functional benefits of neuro-behavioural rehabilitation to a setting utilising a PBS approach. An audit was conducted to assess the efficacy of PBS with this complex and heterogeneous patient group. In addition, there is some difficulty in reliably measuring change in this population, therefore the audit also aimed to assess the utility of two recommended measures in ABI.

Method: An audit of patients discharged (2015-2022) from the NRU at the RHN was conducted. Wilcoxon's signed-rank tests were used to compare overall admission and discharge FIM+FAM scores. In addition, the average admission and discharge for scores on both the FIM+FAM and the SASNOS were utilised to create radar charts. These provide a graphic representation of the changes from admission to discharge on both measures respectively.

Results: A total of 58 patients (65% male, 35% female) were included in the audit (mean age 46). The majority of patients were White British. Most patients were admitted to the NRU following a TBI (43%), an average of 9 months after their injury. The results showed that the mean FIM+FAM score from admission to discharge showed significant statistical improvement. Furthermore, both the FIM+FAM and the SASNOS radar charts depicted improvement on all individual items.

Conclusions: The findings support the effectiveness of PBS in a neuro-behavioural rehabilitation setting. Careful selection of outcomes measures, and consistent completion is necessary to successfully support funding for neuro-behavioural rehabilitation services. The FIM+FAM is not specifically designed for use in those with neuro-behavioural difficulties but is well recognised by commissioners and stakeholders. It shows significant improvements in this patient population. However, we recommend its use is combined with other outcome behavioural specific

measures such as the SASNOS.
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Audit of Positive Behaviour Support Plans against recent Court of Protection Guidance
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Background and Objectives: The Neuro-Rehabilitation Unit (NRU) within The Royal Hospital for Neuro-disability admits adults who have suffered an acquired brain injury (ABI) and present with challenging behaviour. The NRU employs a Positive Behaviour Support (PBS) approach to manage challenging behaviours, by reinforcing adaptive behaviours that optimise quality of life. A bespoke PBS plan is developed for each patient. This is updated accordingly throughout the admission. This PBS plan covers both proactive support strategies (that attempt to reduce the need for behaviour that challenges) and more reactive support that are implemented when challenging behaviour occurs. Dr Theresa Joyce and Victoria Butler-Cole QC have recently proposed standards by which legal practitioners and advocates can scrutinise PBS plans with the aim of determining if a plan is "informed by the evidence base and reflects good practice, and also whether the restrictive physical interventions being used are both necessary and proportionate". This audit aimed to assess whether the NRU's PBS plans are up to these standards.

Method: An audit of the PBS plans for patients (mixture of rehabilitation and long-term) currently admitted on the NRU, was conducted. This data set comprised of 13 PBS plans. Each PBS plan was audited according to the 8 key criteria set out in Joyce and Butler-Cole's guidance. A bespoke audit tool was created to do this.

Results: The results showed that the majority of the original PBS plans contained the correct information but that the structure of the plans meant that some of the sections lacked detail as recommend by the new standards. The variability in the PBS plans such that they

were not all consistent and therefore did not always meet the 8 key criteria.

Conclusions: The findings from the audit indicate that the current PBS plans, although deemed sufficient, did not always satisfy all the criteria outlined by Joyce and Butler-Cole. Therefore, a new PSB plan template was created, and the current patient's plans were modified using the new template. Slight modifications were made to the audit tool to ensure that it was aimed at adults with an ABI as the original standards are aimed at a learning disability population. The audit tool developed will be used on a periodic basis to ensure all components of the guidelines continue to be satisfied with the aim of continuing to promote evidence-based practice and a reduction in physical interventions.

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