
2016 ASSBI Conference Abstracts

MONDAY 26th SEPTEMBER

Workshop 1

Implementation Factors that Enhance Training of Procedural Tasks

McKay Moore Sohlberg

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Clinicians working with individuals who have acquired cognitive impairments are charged with training individuals who have compromised learning to accomplish procedural tasks such as the use of cognitive and communication strategies and assistive technology, activities of daily living and motor sequences. In spite of the centrality of instruction to rehabilitation, studies suggest that clinicians do not routinely use instructional techniques that optimise procedural learning in their patients with significant memory impairments. The purpose of this workshop will be to review the evidence supporting systematic instructional techniques for people with acquired cognitive impairments and describe the primary techniques. The workshop will focus on providing a framework and explicit demonstration of key instructional techniques. Specific course objectives include

1. review of the rationale and evidence-base for using systematic instruction to train procedures;
2. components of a needs assessment to identify training targets and intervention variables;
3. model of training techniques to improve initial acquisition and mastery of skills;
4. multilevel evaluation to provide data that will direct intervention and assess outcomes.

Workshop 2

Measuring and Coping with Cognitive-Communication Problems Following Brain Injury

Jacinta Douglas

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Cognitive-communication problems are a well-established and enduring consequence of brain injury. As many as 70% of people with TBI and those close to them describe everyday interactions as a long-term challenge frequently associated with ongoing stress. Further, impaired communication skills and the strategies used to cope with communication breakdown have been found to correlate significantly and substantially with poor quality of life, lack of employment, poor social integration and reduced emotional wellbeing.

This workshop will focus on two aspects of the management of communication deficits following TBI:

1. Efficient and sensitive measurement of perceived communication deficits and communication-specific coping: Assessments that measure perceived communication enable evaluation of deficits from multiple perspectives as well as evaluation self-awareness. The La Trobe Communication Questionnaire (LCQ) and the Communication-specific Coping Scale (CommSpeCS) will be reviewed and clinical data from these assessments will be used to illustrate their contribution to treatment planning.
2. Effective and efficient intervention: Communication-specific Coping Intervention is a new treatment developed to target coping in the context of communication breakdown. The intervention incorporates the procedures and principles of cognitive behavioural therapy, self-coaching and context-sensitive social communication therapy. The intervention will be reviewed and demonstrated with case examples.

Workshop 3

Treating Social Cognition

Skye McDonald

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Social cognition refers to the ability to process social cues in order to understand and anticipate the behaviour of others. Disorders of social cognition are common following acquired brain injury (ABI); the three main types of problems are (1) recognising emotions in others, (2) understanding the thoughts, beliefs and intentions of others, i.e., Theory of Mind ability and (3) having empathy. These difficulties not only make it difficult to read other people but deprive the person with ABI of important feedback to guide their own behaviour.

In this workshop, I will describe the main features of these kinds of difficulties as they are seen in people with ABI and current assessment tools. I will describe some bottom-up and top-down approaches that we have taken to remediate these difficulties focusing upon our emotion perception training programme. I will also describe how this programme can be integrated into a more comprehensive training social skills programme. Finally, I will discuss some of the preliminary work that has focused upon addressing impairments in Theory of Mind.

TUESDAY 27th SEPTEMBER

Plenary 1

Goal Attainment Scaling Using Motivational Interviewing For Measuring Cognitive-Communication Treatment Outcomes

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There is tremendous need for sensitive, ecological outcome measures for cognitive-communication rehabilitation. A tool that has the potential to provide sufficient specificity for measuring incremental changes produced from cognitive-communicative interventions and relies on patient input is Goal Attainment Scaling (GAS). GAS produces an individualised, criterion-referenced measure of a person's goal achievement that can be aggregated

to quantify the extent to which a group of patients who are receiving the same type of intervention achieve their personalised rehabilitation goals. However, it can be challenging to implement GAS with individuals who have acquired cognitive impairments as deficits in insight, abstraction and memory can impede personal goal setting. Integrating motivational interviewing (MI) techniques with the GAS process can facilitate the construction of GAS that meet scale construction criteria. This talk explores how to integrate principles and procedures of MI to construct GAS that are reliable and valid. A prototype tool that facilitates this process, electronic Goal Attainment Scaling (eGAS) will be demonstrated along with the sharing of initial feasibility data.

Memory Groups for Older People, Including those with Mild Cognitive Impairment: Do they Work?

Glynda Kinsella

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Governments worldwide are promoting the importance of maintaining cognitive health into older age to minimise risk of cognitive decline and dementia. In addition, the importance of maintaining independent living is well recognised as a means of lessening pressure on limited social services and community supports. In this respect, many older people experience troublesome changes in memory performance and seek guidance about how best to manage memory challenges in everyday activities. This is especially the case for older people who display mild cognitive impairment (MCI). Therefore, early cognitive interventions which moderate memory difficulties and assist in maintaining functional independence as long as possible would be useful to large numbers of older people. This presentation will discuss how low-cost memory groups can engage older people in techniques for maintaining cognitive health and improve memory performance.

Concurrent Session 1

Development and Preliminary Validation of the Acute Brain Injury Physiotherapy Assessment (ABIPA)

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For patients with a severe brain injury, there is no objective physiotherapy assessment tool that is sensitive to the incremental changes in motor recovery in the acute stage. This study aims to identify the items of neuro-motor recovery and scoring criteria for the Acute Brain Injury Physiotherapy Assessment (ABIPA) and determine sensitivity to change and concurrent validity against accepted standard measures of consciousness and physical function in the severe brain injury population. Further investigation will then highlight inter-rater and intra-rater reliability.

The literature was searched and an expert consensus panel of experienced clinical physiotherapists informed item selection, established content validity and developed practical assessment guidelines. The ABIPA was investigated for sensitivity to change and concurrent validity against the Glasgow Coma Scale (GCS), Clinical Outcome Variable Scale (COVS) and Motor Assessment Scale (MAS). Eleven patients (nine males; cohort 41 ± 18 years) with moderate/severe brain injury were recruited, and assessed at Day 1, 3, 7 and then weekly until discharge. The ABIPA demonstrated good to excellent correlations overall with the GCS ($\rho > .76, p \leq .001$), COVS ($\rho > .82, p \leq .001$) and MAS ($\rho > .66, p \leq .001$). At Day 3, the ABIPA showed the greatest sensitivity to change (SRM $> .83$) compared to other measures (SRMs $< .77$). At discharge, all tools demonstrated change in neuro-motor recovery. Investigations into reliability showed all physiotherapists ($n = 30$) inter-tester reliability was excellent ($\alpha = .9$) for the total ABIPA score.

The ABIPA is developing as a valid tool for detecting incremental changes in neuro-motor recovery early after severe brain injury.

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Psychometric Properties of the Singapore General Aphasia Test (English)

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Background and aims: Stroke is a significant cause of disability in Singapore and aphasia contributes to the disability burden. Reliable aphasia assessment is important, but there has been no locally normed aphasia test in Singapore. Speech-Language Therapists (SLTs) conduct assessments with roughly translated versions of established aphasia tests. The Singapore General Aphasia Test (SGAT) (English and Mandarin versions) was developed in response to this need. We present the psychometric properties of the SGAT-English in the four language domains: Auditory Comprehension, Verbal Expression, Reading Comprehension and Written Expression.

Methods: Participants were 43 English-speaking adults of Asian descent with aphasia (AWA) (31 men: Age $M = 57.7$, Range = 23–78; 13 women: Age $M = 57.7$, Range = 40–74). All AWA had (a) minimum English proficiency ratings of 3 on a seven-point likert scale (1 = few words, 7 = native proficiency), (b) had completed at least primary education, (c) were right-handed and medically stable following unilateral, left-hemisphere stroke. Trained SLTs administered the SGAT.

Results: The SGAT-English showed acceptable to high internal consistency across all subtests. Cronbach's alphas ranged from .78–.93 for the subtests in the Auditory Comprehension domain, .88–.97 for Verbal Expression, .62–.94 for Reading Comprehension and .80–.97 for Written Expression. In addition, more than 90% of the intercorrelation coefficients between the subtests within each language domain (Auditory Comprehension, Verbal Expression, Reading Comprehension, Written Expression) were significant ($p < .01$) and greater than .7.

Conclusion: The SGAT-English demonstrated sound content reliability within its component language domains and subtests. It is a promising tool for use with English-speaking AWA in Singapore and possibly the region.

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Validity of a New Aphasia Test for English Speakers in Asia

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Background and aims: Few culturally appropriate tools are available for assessing English-speaking adults with aphasia (AWA) in Asia. This paper presents validity data for the Singapore General Aphasia Test-English (SGAT-English).

Method: Participants were 43 English-speaking AWA (Age $M = 58$, $SD = 9.95$) and 30 English-speaking language normal adults (LNA; Age $M = 57.2$, $SD = 12.71$) in Singapore. Speech-Language Therapists administered the Auditory Comprehension, Verbal Expression, Reading Comprehension and Written Expression domains of the SGAT-English to all participants and rated the aphasia severity of all AWA. Thirty-one AWA and all LNA were tested on equivalent subtests of the Boston Diagnostic Aphasia Examination (BDAE).

Results: The results of a discriminant analysis revealed that the SGAT-English differentiated accurately AWA from LNA, with an overall correct classification rate of 87.7%. Spearman's rho showed significant correlations between the English Aphasia Severity Rating Scores and the English scores for Auditory Comprehension ($\rho = .801$, $p < .001$), Verbal Expression ($\rho = .893$, $p < .001$), Reading Comprehension ($\rho = .831$, $p < .001$) and Written Expression ($\rho = .816$, $p < .001$). Intra-class correlation coefficients for inter-rater and intra-rater reliability for the aphasia severity scores were high at .93 and .96, respectively. Additionally, Pearson's correlation coefficients revealed significant correlations between the SGAT-English and BDAE for Auditory Comprehension ($r = .844$, $p < .001$), Verbal Expression ($r = .947$, $p < .001$), Reading Comprehension ($r = .915$, $p < .001$) and Written Expression ($r = .887$, $p < .001$).

Conclusions: The SGAT-English can be used reliably to assess aphasia in English-speaking Asians. The SGAT is also available in an equivalent Mandarin version which is currently being psychometrically evaluated for use with Mandarin and English – Mandarin bilingual speaking AWA.

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Reliability of a Picture Description Rating Scale for English Speaking Adults with Aphasia

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Background and aims: Scoring a picture description task for adults with aphasia (AWA) can be complex due to the diversity of errors produced. Scoring criteria in other standardised aphasia tests (e.g., Comprehensive Aphasia Test) are unsuitable for the linguistic context of a bilingual Asian population. We present preliminary reliability and validity data for a picture description rating scale developed for use with the Singapore General Aphasia Test (SGAT). The scoring criteria reflect the diversity of language use in a population that speaks more than one language.

Method: Ten AWA ($M_{\text{age}} = 52.2$, $SD = 11.3$) and 10 language-normal adults (LNA) ($M_{\text{age}} = 58.1$, $SD = 9.2$) provided verbal descriptions of the 'supermarket scene' from the SGAT in English. Participants had English proficiency

rating of at least 3 on a seven-point likert scale (1 = few words, 7 = native proficiency). Two trained Speech-Language Therapists (SLTs) performed blind ratings of the language samples using four sub-scales: Theme, Content, Form and Speed.

Results: Mean scores for LNA were found to be significantly higher than AWA across all four subscales and the total score ($t = -3.23$, $p = .006$ for Theme; $t = -2.885$, $p = .014$ for Content; $t = -2.29$, $p = .039$ for Form, $t = -2.86$; $p = .013$ for Speed and $t = -3.19$, $p = .008$ for Total Score). Inter- and intra-rater reliability for the two SLTs using intra-class correlation coefficients (ICCs) were found to be above .9 for all five measures ($p = .000$).

Conclusions: Preliminary results demonstrate that the picture description rating scale has promising validity and reliability. We are evaluating the rating scale with a larger population of AWA and LNA.

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The Clinical Utility of the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) in a One-Stop Memory Clinic Service in Singapore: A Pilot Study

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Background and aims: This pilot study aimed to examine the convergent and discriminant validity of a brief neuropsychological test, the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS), in discriminating between patients with no cognitive impairment (NCI), mild cognitive impairment (MCI) and mild Alzheimer's disease (AD) in a one-stop memory clinic service. We also evaluated the discriminant validity of RBANS plus, i.e., supplemented with executive and language tests [Color Trial Test (CTT) and modified Boston Naming Test (mBNT)].

Method: Ninety patients ≥ 50 years with NCI, MCI and mild AD were recruited and received the RBANS, CTT and mBNT and a gold standard formal neuropsychological test battery.

Results: The RBANS and RBANS plus showed good convergent validity with the formal neuropsychological battery in global cognition and most domains ($p < .001$). Analysis of variance (ANOVA) showed that RBANS total scale scores could distinguish between NCI, MCI and mild AD patients [99.0 vs. 72.7 vs. 67.0, $F(2, 87) = 74.35$, $p < .001$]. Area Under the Receiver Operating Characteristic curve (AUC) analyses showed RBANS had good discriminant validity and was equivalent to RBANS plus in discriminating patients with cognitive impairment from those with NCI, and MCI from NCI (AUC: .97 vs. .97; .95 vs. .94; respectively). However, RBANS or RBANS plus had less discriminatory abilities in differentiating MCI and AD (AUC: .82 vs. .81), which may be due to the lack of functional measures.

Conclusions: RBANS supplemented with CTT and mBNT is expeditious, has good convergent and discriminant validity, and is therefore suitable for one-stop memory clinic service.

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Concurrent Session 2

Therapists' Reflections Regarding Goal Setting with Community Dwelling Adults with Acquired Brain Injury: A Theoretically Derived Framework to Guide Practice

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B **ackground and objectives:** Goal setting is a vital process in rehabilitation, providing the focus for inter-disciplinary and multi-disciplinary intervention. Client inclusion in the goal setting process is recommended; however, this may be more challenging after acquired brain injury (ABI) due to changes in cognitive and psychosocial functions. Research with clients with ABI has highlighted a gap between goal setting approaches in research and practice. Recognising that the needs of community dwelling clients differ to those in the inpatient setting, this study aimed to explore therapist's experiences of goal setting with community dwelling clients with ABI in routine clinical practice.

Method: Grounded theory methodology was employed. A total of 22 therapists, representing six disciplines across three contrasting services, were recruited and interviewed using maximum variation and theoretical sampling procedures. Multiple strategies were used to enhance rigour, including constant comparative analysis, independent coding, consensus meetings, peer checking and measures to control bias.

Results: A theoretical framework was developed to explain how goal setting processes are adapted by therapists to develop realistic client-centred goals for clients of all ability levels. Contextual factors, such as organisational philosophy, team structures and therapist skills and beliefs, also determine whether a client-centred goal setting approach is implemented.

Conclusions: There is a predilection towards a client-centred goal setting approach in the community setting; however, contextual factors can inhibit implementation of this approach. Therapists may benefit from training to understand how the goal setting process can be adapted to engage clients of all ability levels in clinical practice.

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Evidence, Lessons and Challenges: An Analysis of the First 6 Years of Participant and Leader Feedback Data from a Community Brain Injury Rehabilitation Group Programme

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B **ackground and Objectives:** The Skills To Enable People and Communities (STEPS) Programme is a specialist information, support and skills-based group programme that aims to improve community re-integration for adults with Acquired Brain Injury (ABI) and their families. An innovative peer-professional workforce structure is utilised for programme delivery in local communities throughout Queensland. This study provides an analysis of the first 6 years of programme evaluation data from 2009–2014.

Methods: Following completion of the 6-week programme, participants and leaders complete separate feedback questionnaires that ask a series of targeted questions rated on a five-point Likert scale along with opportunity to provide

written qualitative comments. Descriptive statistics were used to explore experiences, outcomes and satisfaction. In-depth thematic analysis was used to further examine participant and leader reflections.

Results: There were 736 participant and 193 leader feedback questionnaires completed, representing a response rate of 61% and 63%, respectively. Participant satisfaction was consistently high with both participants and leaders reporting that the programme was informative and helped them develop connections with other participants and their wider community. Support for the leadership structure was evident with most respondents reporting that the leaders were well organised, approachable and knowledgeable. Qualitative data provided valuable insights into participant/leader experiences and also yielded consumer-led suggestions for future service improvement.

Conclusion: This preliminary evaluation data supports the efficacy of this innovative community-based service with some clear recommendations for service improvement. Further participatory research is required to explore the benefits of this unique peer-professional workforce structure.

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Current and Best Practices in Community-Based Behaviour Management Following Acquired Brain Injury (ABI): A South Australian Perspective

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Background and Aims: Challenging behaviours have been reported as most detrimental in community re-integration following ABI. Service providers are unable to meet support needs, and family care givers (who often take on the primary support role) are ill-equipped to manage behaviour changes in community settings. The current study aims to shed light on current strategies utilised by families, and reach consensus on best practices in supporting family care givers to better manage challenging behaviours following ABI.

Method: Service providers ($n = 8$) and family care givers ($n = 3$) completed a three-round Delphi study in order to reach consensus (75% agreement) regarding research objectives. In Round 1, participants were asked open-ended questions to identify items, which were then rated according to use/importance in Round 2 and 3 using a Likert scale. Statistical aggregation then allowed for quantitative analysis.

Results: The findings revealed a number of behaviour management strategies used by family care givers, including basic antecedent strategies, the use of medication, and agreeing with the person's demands. Consensus was reached on all items presented regarding best practices in supporting family care givers with behaviour management, including education topics relating to common outcomes, specific behaviour and self-care strategies, and information on support agencies.

Conclusion: Findings suggest that family care givers should be further educated and supported regarding behaviour management strategies following ABI. The high level of consensus regarding best practices, and recommendations from the literature, suggest a broad agreement on what support is needed yet still not being provided. This highlights the importance of developing targeted programmes/guidelines specific to these needs.

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'Specialist Disability Accommodation' within a National Disability Insurance Scheme: Creating a Range of Housing Options for People with Acquired Brain Injury

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B **background and aims:** People with ABI are now transitioning from state-funded disability services to Australia's National Disability Insurance Scheme (NDIS). Some reside in or require specialist disability accommodation (SDA). The NDIS SDA Pricing and Payments Framework has been released to transition existing supported accommodation to the Scheme, stimulate SDA market investment, and leverage the \$700M NDIS housing capital budget. This paper will (1) detail the Framework and its application for people with ABI; (2) outline differences between traditional accommodation services and this market-driven SDA approach and (3) provide exemplars of new housing models applying the Framework principles, to stimulate audience thinking on SDA innovation.

Method: A systematic overview of NDIS policy, including the SDA Framework, will be provided. Principles and key pricing elements will be detailed and illustrated through three case studies: integrated apartment living, where apartments are peppered throughout residential developments; small-scale residential living, where three people with ABI share supports delivered by therapy assistants and SDA housing co-located on a University campus, where tenants receive targeted health professional student input.

Results: The NDIS SDA Pricing and Payments Framework has capacity to change the way people with ABI choose from and develop SDA options. It provides significant opportunity to scale the number and type of supported living options available, delivering new and innovative solutions.

Conclusions: People with ABI and their families, and health professionals working with them, need to build capacity to understand this Framework and how best to harness funding to achieve SDA outcomes that enhance community inclusion.

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Is a Peer-Led Group Training Intervention More Effective than a Social Activity Group in Improving Social Skills following Brain Injury?

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B **background and aims:** Reduced social integration and competence following brain injury are well documented. The effectiveness of group-based social communication skills training interventions (Cicerone et al., 2011) and training for communication partners has been investigated. Togher et al. (2013) reported that training partners in the use of facilitative strategies is more effective than training the person with the brain injury alone. The majority of studies investigate the benefits of training family, friends, carers and other professional groups. To date an evaluation of peer-led training has not taken place.

Method: A pilot randomised controlled trial (RCT) ($n = 8$) tested the clinical feasibility of the approach, followed by a second study RCT ($n = 9$).

Behaviour was measured twice at baseline, immediately after intervention, and at maintenance. Four outcome measures were used to evaluate change:

- The Adapted Measure of Participation in Conversation.
- Behavioural Referenced Index of Social Skills (revised).
- Profile of Pragmatic Impairments in Conversation.
- A new measure of situated conversational interaction.

Results: There were no differences at baseline between the experimental and control groups. The outcome measures showed differential sensitivity. There were significant differences in the treated group on the Adapted Measure of Participation in Conversation.

Conclusions: There is some preliminary evidence for an advantage for peer-led groups but the effects are modest.

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Concurrent Session 3

The Use of Electronic Assistive Technology for Social Networking by People with Disability Living in Supported Accommodation

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See prize winning abstracts

Does Drinking Coca-Cola Affect Neural Responses to Images of Coca-Cola?: fMRI Studies of Habitual and New Cola Drinkers

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Background and Aims: Concepts from the addiction literature have been adapted to explain why some people persist in eating unhealthy high-calorie foods. However, it is not clear if or how the frequent consumption and withdrawal of such foods influences neural responses to associated external cues. In two studies, we assessed the impact of daily Coca-Cola consumption and its' withdrawal on neural responsiveness to external images of Coca-Cola.

Method: In Study 1, habitual cola drinkers ($N = 10$) and infrequent cola drinkers ($N = 11$) were respectively asked to drink Coca-Cola or a brand-name mineral water every day for three weeks (consumption phase) before engaging in fMRI scans that featured images of Coca-Cola and water. In the subsequent follow-up phase, both groups drank mineral water for 30 days followed by a second scan featuring the same stimuli. The methodology for Study 2 was

identical except infrequent cola drinkers ($N = 21$) were randomly assigned either to drink either Coca-Cola or mineral water during the consumption phase.

Results: In Study 1, frequent cola drinkers had significantly higher cola liking at baseline and follow-up but not after the consumption phase. Consumption phase fMRI results failed to support the hypothesis that frequent cola drinkers would display relatively enhanced responding in areas linked to food reward during exposure to cola images. Instead, cola drinkers displayed a pattern of comparatively reduced activation in regions related to visual processing, cognitive control, attention and memory. Follow-up scan results indicated nearly all group differences in activation were eliminated after both groups had switched to drinking mineral water. Similarly, Study 2 cola group members showed comparatively reduced activation in various regions during exposure to cola images in the post-consumption phase scans whilst there were no activation differences at follow-up after both groups switched to drinking water for an extended period.

Conclusion: In sum, addiction concepts including tolerance and withdrawal fail to provide entirely convincing explanations for neural responses to salient external cues amongst habitual Coca-Cola drinkers or infrequent drinkers who had recently initiated regular consumption.

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Stressors Reduce Inhibition to Food Cues Amongst Binge Eaters: An Experimental fMRI Study

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Background and Aims: Stressors may trigger binge-eating but researchers have yet to consider their effects on both neural responses to food cues and food consumption within at-risk groups. In this experiment, we examined the impact of acute stressors on neural activation to food images and subsequent food consumption within binge-eating disorder (BED) and non-eating disordered control groups.

Method: Nineteen participants meeting DSM-IV BED criteria and 27 non-eating disordered controls were randomly assigned to unpleasant (painful cold pressor test followed by negative performance feedback) or neutral lower (non-painful sensory discrimination task followed by positive performance feedback) stressor conditions. Subsequently, they were scanned with functional magnetic resonance imaging (fMRI) whilst viewing food and neutral images. After the scans, participants completed a self-report battery in an environment conducive to snacking.

Results: BED participants in the unpleasant stressor condition reported more liking of high-calorie food images and showed less activation in one hypothesised inhibitory area, the hippocampus, compared to controls in this condition. BED participants exposed to unpleasant stressors also consumed significantly more chocolate than any other group following the scans. Crucially, reduced hippocampal activation to high-calorie food images predicted more chocolate consumption following scans in the entire sample.

Conclusion: The study provides preliminary evidence indicating unpleasant acute stressors contribute to reduced inhibitory region responsiveness in

relation to external food cues and later snack consumption amongst persons with BED.

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Infralow Frequency Neurofeedback in the Complex Rehabilitation of Minimally Conscious State Patients

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Background and aims: Decreased level of consciousness imposes significant restrictions on the possibility of contact with a patient and on the range of appropriate rehabilitation procedures. In recent years, the training protocol based on the Infralow (<.01 Hz) EEG frequencies corresponding to the frequencies of the passive networks of the brain (the default mode network) was developed. This training method does not require a fully conscious state of the patients. The main research purpose in this project is evaluation of the therapeutic features of the Infralow Frequency neurofeedback (IFN) in the rehabilitation of minimally conscious state (MCS) patients.

Method: The study involved 10 MCS patients (7.4 ± 2.5 points by the GCS). All patients were examined with brief neuropsychological scales before the start of neurofeedback and every 3 weeks during the therapy: Level of Cognitive Functioning Scale, Der Neuromentalindex, The Glasgow Coma Scale. After the first examination, all patients received five sessions of the IFN per week during 45 ± 14.1 days.

Results: Statistical analysis shows significant differences ($p < .05$) in the results of all neuropsychological measurements at the beginning, in the middle and at the end of IFN therapy.

Conclusions: During the IFN therapy, a clinical group of MCS patients showed significant improvement. In this regard, the methods of the Infralow Frequency Neurofeedback deserve a great attention as a promising tool which improves the level of consciousness of patients in the accessible conditions.

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Use of 5 Hz rTMS to Improve Speech Functions in Post Stroke Dysarthric Patients

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Background and aims: Recent developments in stroke rehabilitation using neuromodulation techniques showed positive results. Studies have shown that repetitive transcranial magnetic stimulation (rTMS) can improve upper limb and swallowing functions after stroke. This study aimed at investigating the use of 5Hz rTMS in improving speech functions of individuals with post stroke dysarthria.

Method: Five participants (mean age = 57 years old) with chronic post stroke dysarthria were included in the study. Each participant received 3000 pulses of 5 Hz rTMS for 10 days. rTMS was applied over the tongue area of the motor cortex. All participants were assessed 1 week before, immediately after

and 1 month after rTMS. The outcome measures included rates of tongue movements, diadochokinetic (DDK) rate and speech rate.

Results: Participants showed improvements in rates of tongue movements and speech rate immediately post-rTMS. These changes were maintained up to 1 month post-rTMS. They also showed increased DDK rate at 1 month post-rTMS.

Conclusions: The current study provides preliminary evidence that 5 Hz rTMS applied over the tongue area of the motor cortex can potentially improve speech functions of individuals with chronic post stroke dysarthria.

Acknowledgement: This project was funded by the Early Career Scheme, University Grants Council, Hong Kong

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Cognitive Rehabilitation of Primarily Ketamine Users: A Randomised Controlled Trial.

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B **background and aims:** Ketamine users' cognitive problems can be a barrier in rehabilitation. Reducing the effect of this cognitive impairment was hypothesised to improve their work rehabilitation outcomes. The present study used virtual reality (VR) as an intervention tool for cognitive training.

Methods: This study was a single-blinded, randomised controlled trial (RCT). Participants were randomly assigned to two treatment groups (virtual reality group/VRG and tutor-administered group /TAG) and a wait-listing control group (CG). The outcome assessments comprised of Digit Vigilance Test (DVT), Rivermead Behavioral Memory Test, Wisconsin Card Sorting Test (WCST), work-site test and self-efficacy during pre-, post-test and 3-month follow-up. Two training programmes (a VR-based and a manual-based, both were of similar content but different delivery modes) using a boutique as a training scenario.

Results: Thirty subjects of each group were successfully recruited. VRG had significant improvement in attention. Memory was also improved and maintained at 3-month follow-up.

Conclusions: VR-based cognitive training might address the cognitive problems in ketamine users. TAG has also benefits including the improvement of selective cognitive function and work self-efficacy. The working context of the training environment can be perceived as being highly relevant to the users' perspective compared to component-based cognitive training.

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Concurrent Session 4

Remediation of Social Communication Impairments following Traumatic Brain Injury using Metacognitive Strategy Intervention: A Feasibility Study

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Background and objectives: Social communication impairments are a common consequence of Traumatic Brain Injury (TBI) resulting in reduced social participation and life satisfaction, and poor return to work outcomes. This study aimed to examine the feasibility and effectiveness of a novel metacognitive, goal-based intervention for improving the social communication skills of adults with TBI.

Method: Eight community-dwelling participants with TBI completed three study phases: (1) 4-week baseline, (2) 8-week intervention and (3) 4-week follow-up. During the intervention phase, participants attended two 1-hour therapy sessions per week (one individual; one group) using metacognitive strategy intervention and goal-based therapy to target impaired social communication behaviours. Participants completed the Profile of Pragmatic Impairment in Communication (PPIC), LaTrobe Communication Questionnaire (LCQ) and Goal Attainment Scaling (GAS) at recruitment, pre- and post-intervention, and at follow-up.

Results: All eight participants completed all session within the programme. There was a significant increase in GAS T scores following the intervention ($p = .012$). Six of the eight participants achieved or exceeded their expected level of performance on all goals, and two participants achieved all but one of their goals. A non-significant improvement in LCQ scores was also observed ($p = .058$), whilst PPIC feature summary scores post-intervention revealed variability in change across participants.

Conclusions: A goal-driven, metacognitive approach to intervention is feasible and may enable individuals with TBI to achieve their personal social communication goals, with benefits reported by participants and observable during conversations. Further research is warranted.

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Acceptance and Commitment Therapy to Facilitate Psychological Adjustment After a Severe Traumatic Brain Injury: A Randomised Controlled Trial

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See prize winning abstracts

An Intervention to Increase Meaningful Occupation After Traumatic Brain Injury

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B **background:** It is well-known that only one-third of people with severe degrees of traumatic brain injury (TBI) return to work. Moreover, many people who are not able to return to work also lead impoverished and lonely lives, with limited meaningful occupation and social contacts. Neuropsychological impairments, especially apathy, often prevent the person from developing and maintaining an engaging lifestyle. The aim of the present study was to develop an intervention to address this need, using ‘a whole of life’ approach. **Method:** We systematically reviewed the literature, but did not identify any such interventions. Accordingly, we developed a new intervention adopting a ‘whole of life’ philosophy and implemented it with a series of participants using single-case experimental methodology.

Results: The intervention, the Programme for Engagement, Participation and Activities (PEPA), is an individually tailored, community-based intervention, which is implemented within a therapeutic recreation model. It extends over a number of months, with weekly face-to-face sessions, supplemented with inter-session tasks and activities. The paper describes the four phases of the intervention: set-up (involving assessment, goal-setting and selection of target behaviours); baseline tracking; strategies used in the implementation phase; and forward planning and maintenance. We illustrate the intervention with examples from our series of single-case experiments.

Conclusions: It is a challenging endeavour to change behaviours, and especially in under-occupied people with apathy many years after TBI. Our preliminary evidence suggests that the PEPA may be a viable therapeutic approach to increase meaningful activity in this subgroup of people with TBI.

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Improving Emotional Facial Recognition After a Traumatic Brain Injury: Evaluation of a Combined Verbal and Visual Scanning Intervention Using a Single Case Experimental Design

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Background and Objectives: People with traumatic brain injury (TBI) often demonstrate difficulty in emotional facial recognition. This research aimed to evaluate the effectiveness of a combined visual scanning and verbal feedback intervention.

Method: A single case experimental design (A-B-A) was used. The participant was a 35 year-old male who had sustained a severe TBI 6 years previously. He demonstrated normal corrected visual acuity and full visual fields. The facial stimuli were 72 coloured face photographs from the Radboud Faces Database (Langer et al., 2010; used with permission) which included six universal facial expressions of emotion (happy, sad, angry, disgusted, anxious and surprised). Each face stimulus was presented, and scanning data acquired, using the T120 binocular eye tracker (Tobii Technology, Stockholm, Sweden). Total study duration was 10-weeks (approximately 35 hours) and the intervention phase (5 weeks) included the use of eye movement instruction to orient visual attention to salient facial areas when a labelling error occurred. Verbal descriptions of each emotion to explain the associated facial features were also provided.

Results: Percentage of non-overlapping corrected data (PNCD) was used in the analysis (Manolov & Solanas, 2009). A large treatment effect was demonstrated (PNCD: end of treatment = 100%, 3-week follow-up = 100%). At follow-up, a less restricted scanning strategy was evident on visual inspection, as exemplified by a greater number of fixations that often overlaid salient facial features.

Conclusions: This novel intervention was effective in improving facial affect recognition in TBI. Long-term effects of this intervention require further investigation.

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A New Dimension of Memory Enhancement for Persons with Mental Illness and Brain Injury – The Prospective Memory Training Programme (CogSMART)

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Introduction: Prospective memory (PM) is the memory involved in remembering to undertake activities in the future. It is proven to have great implications in successful execution of many tasks in daily life. In everyday living, people who complained of memory deficit always give examples of PM failures. Daily functioning would be enhanced if people can adopt effective PM strategies. Cognitive compensation training works around cognitive impairments of the individuals and induces brain plasticity. It is also a recovery-orientated programme which aims at linking strategies use to accomplish individuals' life roles and their recovery goals in daily life such as work, social life or health.

Objective: A Cognitive Symptom Management and Rehabilitation Programme (CogSMART) was adopted to empower and enhance clients with PM difficulties to achieve their best possible functioning in daily living. It

comprised of training on compensatory cognitive strategies for effective memory aids use such as calendar as well as short-term PM strategies. Conversational attention training was also included as one of the training component in the programme. These training components aimed at helping clients to plan their work or school activities effectively, remembering the conversations better and efficiently prioritising daily tasks. Home exercises were designed to help participants generalising the strategies into their everyday lives and also building up certain habit.

Method: Clients attending Psychiatric Day Hospital or Occupational Therapy Workshop in United Christian Hospital, who subjectively complained of PM deficits in Activity of daily living (ADL) and/or Instrumental activity of daily living (IADL) tasks, were recruited to CogSMART programme. This programme consisted of four weekly 1 hour group and daily home assignment, including cognitive strategies and PM strategies for practising at home and in community. It facilitated participants to build up habits in using the captioned strategies. A daily log book was used to promote the compliance of programme. Pre-post treatment evaluation with Assessment of Prospective Memory (APM) and Chinese version of the Cambridge Prospective Memory Test (CAM-PROMPT-C) were adopted.

Result and outcome: Fifteen participants (nine male, six female) with mean age of 43.75 ± 11.748 years had completed the treatment from January 2015 to December 2015. Paired-sample *T* tests showed significant improvement in post-treatment CAM-PROMPT-C ($p = .028$) and APM ($p = .002$). The mean score of Basic ADL and Instrumental ADL were improved. The mean self-rated satisfaction score on the treatment group was 8.36 out of 10 point scales (with 1 least satisfied and 10 most satisfied). To conclude, CogSMART is an effective and practical training package in improving PM and it brings a new important dimension in cognitive rehabilitation for persons with mental illness.

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A Pilot Study on Prospective Memory Training Programme for People with Schizophrenia

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Background and aims: Prospective memory (PM) deficit is the most frequent memory failure of people with schizophrenia which poses adverse impact on functional abilities, including work, social and daily living. However, limited training programme existed to address their needs. A pioneer 10-session group training programme, namely Comprehensive Training on Prospective Memory Training (CTPM) was developed which sheds light on spontaneous retrieval with the use of implementation intention, compensatory techniques and individual cognitive training. With PM improved, participants were empowered to achieve their life goals and thus improving their functioning.

Method: The feasibility of CTPM was evaluated in a pilot study ($n = 8$) with targeted in-patient with schizophrenia in a psychiatric hospital. Outcome measures included Cambridge Prospective Memory Test (CAMPROMPT), MATRICS™ Consensus Cognitive Battery (MCCB) and UCSD Performance-Based Skills Assessment (UPSA-Brief), respectively before and immediately after the training programme. Participants' feedback on the training programme was also collected.

Results: The results indicated trend-level improvement in PM and functional performance of participants. The average % change for the total score of CAM-PROMPT, and two subtests' scores of UPSA-Brief; finance and communication, were 38.8%, 14.8% and 47.7%, respectively. The participants responded favourably on the content, structure and duration of the programme. They felt gains in PM performance, where implementation intention, visualisation and use of memory aids were the most useful techniques to them.

Conclusions: The findings suggested that CTPM is feasible and may yield clinical benefits, particularly in PM and functional performance. Further controlled trial studies are needed to validate these preliminary findings.

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Concurrent Session 5

The Paediatric Awareness Questionnaire: A New Measure of Awareness Deficits in Children and Adolescents After Traumatic Brain Injury

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Background and Aims: Awareness of deficits has been found to have significant influence on functional outcomes following traumatic brain injury (TBI) in adulthood, but has received relatively little attention after paediatric TBI. There is a lack of tools for assessing awareness of deficits in children and adolescents. The current study aimed to pilot the Paediatric Awareness Questionnaire (PAQ) and examine psychometric properties of this new tool.

Method: The PAQ was administered to 32 children with TBI (72% male, M age = 11.75, SD = 2.9) and their parents, and 32 age and gender-matched typically developing controls and their parents. Larger negative discrepancy scores on the PAQ (parent minus child scores) were indicative of greater deficits in awareness. All parents also completed the Depression Anxiety and Stress Scale-21 Item version (DASS-21), and a socio-demographic background questionnaire.

Results: The PAQ was found to have 'good' to 'excellent' internal consistency for the child (α = .87-.93) and parent (α = .90-.97) versions in both groups. Poorer awareness was significantly related to younger age at injury and higher levels of parental anxiety. Children with TBI demonstrated significantly poorer awareness (M = -13.63, SD = 38.4) than typically developing controls (M = 7.5, SD = 11.7, p = .005, Cohen's d = .76). The difference in PAQ discrepancy scores between the TBI and control groups was significant after controlling for parental anxiety.

Conclusions: These findings provide preliminary support for the reliability and validity of the PAQ for assessing awareness of deficits after paediatric TBI.

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Intensive Upper Limb Therapy Approaches for Children with Unilateral Cerebral Palsy: Which is the Best Approach?

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B **ackground:** A range of upper limb therapy models are available to improve independence in daily activities and quality of life outcomes for children with unilateral cerebral palsy. Yet, there is a lack of meta-analytic systematic reviews that evaluate which treatment is most effective, and for which client group.

Objectives: To investigate the (a) efficacy of hybrid or modified constraint-induced movement therapy (CIMT) compared to bimanual occupational therapy (BIM) for improving upper limb function in children with unilateral cerebral palsy (UCP) and (b) explore subgroup differences of treatment outcomes.

Method: Individual patient data from three single-blind randomised comparison trials comparing CIMT to BIM for children with UCP (5–16 years, $n = 128$), regarding bimanual performance, unimanual capacity and movement efficiency outcomes, were compared immediately and 26 weeks post-intervention. Secondary analysis examined influence of age (<9 years), baseline (BL) bimanual hand-use, dose (hours) and duration of therapy delivery on outcomes.

Results: Despite comparable immediate improvements across both groups on bimanual performance and movement efficiency, BIM was favoured for sustained bimanual performance improvements at 26 weeks. Dose (30–60 hours) and therapy duration did not influence outcomes for subgroup relationships. Immediately post-intervention, CIMT was superior to BIM to improve quality of movement for older children, and participants with poorer BL bimanual hand-use. BIM was superior to CIMT for children with higher BL bimanual hand-use, at 26 week outcomes.

Conclusion: Both CIMT or BIM is supported to improve bimanual performance and movement efficiency. Subgroup differences were found for the effectiveness of CIMT and BIM.

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Why do Some Friendships Succeed following Traumatic Brain Injury (TBI)?

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See prize winning abstracts

Clinical Practices Surrounding Friendship Following TBI

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Background and aims: There is little known about how Speech Pathologists (SPs) assist in maintaining and developing friendships. Therefore, the aim of this study was to gain foundational knowledge about the extent to which SPs assist with the development and maintenance of friendships.

Method: Australian SPs who work with TBI were surveyed. The online survey included 37 items covering current practices, barriers to working with friends, SPs attitudes towards working on friendship and their perceptions surrounding why some friendships succeed post-TBI. Descriptive statistics and content analysis were used for analysis.

Results: Sixty-eight SPs responded. 27/68 (39.71%) reported that they did work with friends. The main approach involved providing friends with education (23/27). SPs' rationales for working with friends were to prevent psychosocial issues and for therapeutic benefit. Overall, SPs believed that working on the area of friendship is within their scope of practice. The major reasons SPs did not work with friends, was due to difficulty with access to friends and time constraints. The International Classification of Functioning (ICF) was used to demonstrate the vast factors that SPs identified as contributing to successful friendships.

Conclusions: Whilst some SPs in this sample did include friends in a variety of tasks in rehabilitation programmes for TBI, there remain barriers to maximising the inclusion of friends in TBI rehabilitation programmes. Given the positive attitude that SPs had towards work surrounding friendship, there is potentially scope to build upon current practices of SPs, within the area of friendship.

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Concurrent Session 6

Associations Amongst Personality Characteristics, Cognitive Appraisals and Self-Concept Change After TBI

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Background and aims: Changes to self-concept are commonly reported after severe traumatic brain injury (TBI). How individuals make sense of their injury-related changes and develop a sense of 'who I am now' is poorly understood. This study aimed to examine the associations amongst personality characteristics, cognitive appraisals and self-concept change.

Methods: Participants were 50 adults (76% males) with severe TBI (*M* age = 36.80 years; *SD* = 13.23) who were on average 34 months (*SD* = 40.54) post

injury. Participants completed questionnaires examining personality style (optimism and defensiveness), cognitive appraisals (perceived coping resources, threat appraisals and rumination) and self-concept change (Head Injury Semantic Differential Scale – III).

Results: Optimism was negatively correlated with threat appraisals and rumination. Higher levels of optimism and perceived coping resources were significantly associated with positive self-concept changes ($r_s = .46$ to $.49$, $p < .01$), whereas higher threat appraisals and rumination were significantly related to negative self-concept changes ($r_s = -.52$ to $-.55$, $p < .001$). After controlling for level of optimism, cognitive appraisals significantly accounted for changes in self-concept (R^2 change = $.15$). Rumination accounted for significant unique variance in self-concept change.

Conclusions: Dispositional optimism was found to influence how people appraise the effects of TBI. However, cognitive appraisals and coping resources were related to self-concept change independent of level of optimism, and are better targets for intervention. The implications of these findings for psychological interventions after TBI will be discussed.

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'He Knows How I Work and What I'm Like': Conceptualising Decision-making Support After Traumatic Brain Injury

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Background and Objectives: Maximising the decision-making participation of adults with cognitive impairment is a fundamental aim of contemporary disability policy and rehabilitation practice. This study sought to understand how adults with severe TBI and those around them conceptualise support with decision making.

Method: Constructivist grounded theory methods were used. Data consisted of 42 in-depth interviews generated across eight adults with TBI and 11 decision-making supporters. Interview data were analysed through a process of constant comparison until clear categories emerged.

Findings: One of the key constructs to emerge from this study reflected participants' experiences of *giving and receiving support*. Participants identified various sources of decision-making support, within both formal and informal support relationships. Positive support relationships were characterised by a number of factors including knowing the person well, understanding the impact of brain injury in the context of the person's life, and taking a positive approach to risk. Participants with TBI characterised support in relation to four key functions: creating opportunities, providing expert advice, acting on my behalf and motivating and acknowledging achievement.

Conclusions: Adults with TBI described that flexible, responsive and person-centred decision-making support assisted them to develop a positive self-concept and establish life goals after injury. Rehabilitation professionals play a critical role in supporting the development of positive support relationships by providing person-centred brain injury education and assisting those around the person to develop strategies for providing decision-making support. Finally, the intentional and incidental roles of rehabilitation professionals in acting as decision-making supporters will be discussed.

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Families4Families Inc.: Outcomes of Long-Term Participation in a South Australian Peer Support Network for Families following Acquired Brain Injury: Wave 3 Results

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B **ackground and aims:** Established in 2012, Families4Families Inc. is a South Australian peer support programme for people with acquired brain injury (ABI) and their family. The aim of this study was to identify longitudinal changes in participation, perceived benefits and limitations of the programme, and quality of life outcomes over time.

Method: Longitudinal mixed-methods design including repeated phone interviews and WHOQOL-Bref over three waves (pre-programme, 18 months and 2.5 years).

Results: Fifty-five participants (20 people with ABI; 35 care givers) completed baseline interviews in Wave 1, with 34 repeating the interview in Wave 2, and 21 in Wave 3. All participants demonstrated markedly lower quality of life scores across all domains when compared with Australian population norms. Significant improvements in health satisfaction from Wave 1 to Wave 3 were recorded by attenders ($p < .05$) in contrast to a non-significant decrease in non-attenders. Thematic analysis of interview transcripts from Wave 3 revealed five major thematic benefits from sustained involvement in the programme over 2.5 years: *information; social connection; giving back; enabling change* and a *safety net*. Findings can be interpreted through an empowerment process model, with themes highlighting features of self-efficacy, knowledge and competence.

Conclusions: Small sample sizes limit the generalisability of quantitative results however qualitative findings highlight the value of ongoing supports for the entire family following ABI. Suggestions for ongoing programme development include the continuing need for regional access, ongoing training and support for peer facilitators, and activities/targeted information for older members and those many years post-trauma.

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Building a Strengths-Based Identity Through Storytelling: Results of a Scoping Review

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B **ackground and aims:** Sharing stories is an everyday human experience. Following trauma or disruption to our life-narrative, storytelling helps us regain coherence by integrating aspects of the past narrative within the context of the new. Survivors of traumatic brain injury (TBI) experience significant trauma and loss of identity. Few researchers have explored possible interventions to support identity re-construction following TBI; however, the experiences of qualitative research participants tell us of the therapeutic impact of storytelling. The aim of this scoping review was to identify published evidence on the use of narrative in TBI intervention.

Method: A systematic search of four databases (Cinahl, Embase, Medline and PsycINFO) was conducted. No start date was set on the search, and the end date was December 2015. Narrative interventions were defined as direct client participation in telling their story using written, spoken or visual approaches. Thematic analysis of the findings was conducted.

Results: Twelve articles were identified. Analysis of the findings of these articles yielded an overall theme of 'building a strengths based identity' and four sub-themes: (1) expressing and communicating to others; (2) feeling validated by the act of someone listening; (3) reflecting and learning about oneself and (4) being productive.

Conclusions: These findings support the value of narrative interventions to address the challenge of loss of identity experienced following TBI. Storytelling enables emotional expression and supports personal validation. Healthcare professionals and the community are encouraged to seek opportunities for TBI survivors to share their stories.

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The Development of a Family-Directed Behaviour Management (FDBM) Programme following ABI

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Background and Aims: Family members often become the primary care givers following acquired brain injury and experience significant burden and unmet support needs regarding the management of behaviour changes. Although evidence supports the involvement of family in behaviour management interventions, there are no validated approaches with an emphasis on family involvement. This study aims to develop and seek feedback regarding the Family-Directed Behaviour Management (FDBM) programme, which is designed to empower family care givers to better manage challenging behaviours following ABI in community settings.

Methods: The development of the FDBM programme was informed by a systematic review examining family involvement in community-based behavioural interventions following ABI (Fisher et al., 2015). The FDBM programme was then further validated and refined using a Delphi study, in which service providers ($n = 8$) and family care givers ($n = 3$) reviewed the programme to reach consensus regarding the content and delivery format.

Results: Findings of the systematic review were suggestive of a multiphase intervention, including an education component and individualised sessions. The Delphi panel reached consensus on topics to be included in the FDBM programme and an appropriate delivery format, including a 4-week face-to-face education phase followed by six fortnightly individualised behaviour management sessions.

Conclusions: The Delphi process has made significant contributions to the FDBM programme by further refining and validating the content and methods of delivery. The next stage of this research will include a preliminary study examining the acceptability and feasibility of the FDBM programme in community settings.

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Plenary 2

Coping with the Unthinkable: Psychosocial Advances in the Management of Primary Brain Tumour

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Brain cancer is a complex and distressing illness with a typically poor prospect for survival. Worldwide, approximately 256,000 people (1800 in Australia) are diagnosed each year (Ferlay, Soerjomataram, & Ervik, 2013). Cancer of the brain poses a double threat – to one’s survival and sense of self. Most people with primary brain tumour develop serious neuro-cognitive symptoms (e.g., seizures, memory loss) and experience poor mental health and quality of life, which places enormous burden on family care givers. Not surprisingly, high rates of psychological distress have been reported by people with brain tumour and their family care givers. Psychological distress can persist beyond primary treatment, and often increases in the long-term phase of illness due to the perceived threat and experience of recurrence and functional decline. Over the last decade, there have been many advances in the psychosocial management of people with brain tumour. This presentation provides an overview of the functional, psychological and social consequences of brain tumour, summarises some leading developments in psychological assessment and management, and outlines future directions in intervention research.

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WEDNESDAY 28th SEPTEMBER

Plenary 3

Biological and Environmental Factors that Predict Variation in Developmental Language Outcomes

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Background and aims: Spoken language is the most critical skill acquired during the pre-school years. For most children, this is an effortless process that is underpinned by a complex combination of biological and environmental factors. This presentation will explore information from population studies of child language in Australia, the UK and the USA to identify the predictors of stability, change, improvement and decline in children’s language trajectories. **Results:** Best estimates suggest that around 15% of pre-school children have some difficulty in learning language. Recent population studies suggest that the degree of fluidity and individual variability in early developmental trajectories has been underestimated. **Conclusions:** These findings present significant challenges to the way in which children with language impairment are identified and the manner in which traditional specialist services are organised. Exploration of both biological and environmental factors will be considered with emphasis on mutable factors that might be targeted in prevention/intervention programmes.

Chinese Chan Medical Approach as a Possible Neuropsychological Intervention

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Chinese medicine places emphasis on holistic intervention to improve blood and Chi circulation. One theory is that every illness is related to blockage of blood and Chi, and practising some internal kungfu and changing one's diet can help to improve the situation and thus improve physical and mental health conditions. I have developed an intervention based upon the Shaolin medical approach, which is named the Dejian Mind-Body Intervention, and have conducted research to investigate the impact of this intervention on individuals with autism, depression or depressive mood, and mild cognitive impairment. Empirical evidence has suggested that this intervention can reduce depressive mood, and improve memory, self-control, flexible thinking, sleep, digestive function and overall physical health. These positive effects have been found following an 8-week intervention. Thus, the Chinese Chan Medical Approach can be a clinically effective method to improve the cognitive, emotional and physical functioning of patients with brain disorders.

Concurrent Session 7

Preventing Dementia with Innovative Toy Library Model

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Background and aims: The first Toy Library for the Elderly has been customised to meet the therapeutic needs of the elderly with Mild Cognitive Impairment (MCI). A quantitative randomised controlled trial research has been conducted to examine its effectiveness in improving cognitive and psychological health of the users.

Method: Between subject pre-test–post-test design was adopted. One hundred nineteen elderly screened by The Montreal Cognitive Assessment (MoCA) with scores from 17 to 25 were recruited as participants. In the intervention group, 20 pieces of toys were selected to train up their visual/spatial perception, reactivity, memory, attention and logical thinking. A total of 24 play sessions for 60 minutes each were completed within 12 weeks. Two questionnaires were adopted, namely The Hong Kong Chinese version of the World Health Organization Quality of Life (WHOQOL-BREF) and Alzheimer's Disease Assessment Scale – cognitive subscale full version (ADAS-cog).

Results: One hundred thirteen participants completed the pre- and post-test and six participants went through the intention-to treat analysis (ITT). The results showed improvement on their psychological wellbeing ($p = .01$) and overall quality of life ($p < .05$). The cognitive functioning of persons with MoCA 17–19 also improved ($p < .05$).

Implication: The toy library model is suggested to help elderly with MCI to prevent dementia. This model has been serving over 9000 beneficiaries in 1100 sessions in Hong Kong. Volunteers can be trained as toy librarians with a very minimum number of para-medical staff. To conclude, an accessible,

age-friendly, cost effective toy library provision benefits the elderly, their care givers and the community.

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Measuring Social Functioning in People with Dementia: Evidence for Validity and Reliability of the Brief Assessment of Social Skills (BASS)

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B **ackground and objectives:** Despite changes in social functioning being a hallmark symptom of dementia, assessment of these changes is not standard practise. This is partly due to the lack of suitable test instruments. This study aimed to examine the validity and reliability of a brief screening test of social cognition.

Method: The Brief Assessment of Social Skills (BASS) was administered to 15 people with a diagnosis of dementia (M age =75.5: 5F, 5M) and 30 healthy controls (M age =71.9: 18F, 12M). Groups did not differ in terms of age, gender, education, retirement age or premorbid IQ. All participants were assessed on the BASS as well as a number of existing measures of social function to establish evidence for concurrent validity. To establish evidence for retest reliability, participants in the control group were retested on the BASS following a delay of 3–12 months.

Results: Participants in the control group performed significantly better on the BASS than did the group with a diagnosis of dementia ($p < .001$). Significant (moderate to strong) positive correlations were observed between performance on the BASS and the equivalent established tests of social cognition. Evidence for test–retest reliability was also established.

Conclusions: Evidence for the validity and reliability of a new tool designed to quickly and effectively identify social cognition impairment in people with dementia is emerging. In time, it is hoped that provision of such information will assist carers in understanding and managing behaviours associated with dementia, and hopefully help maintain relationships for longer.

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Validation of the Virtual-Reality Prospective Memory Test for Individuals with Schizophrenia

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B **ackground and aims:** People with schizophrenia are reported to have deficits in prospective memory (PM). These deficits have been found to affect their Activities of Daily Living (ADL), the Instrumental Activities of Daily Living (IADL), work and social life. Ecological validity (EV) is considered crucial in PM assessment. One technique that can address better EV is virtual reality (VR). This study thus aimed to examine the psychometric properties of a Virtual-Reality Prospective Memory Test (VRPMT) for schizophrenia.

Method: The VRPMT was administered to 44 individuals with schizophrenia. The test was administered again after 2 weeks, to establish test–retest reliability. The concurrent validity of the VRPMT was evaluated by examining correlations between VRPMT score and score on the Cambridge Prospective Memory Test (CAMPROMPT). The VRPMT performance of individuals with schizophrenia was also compared with that of 42 healthy controls to examine the sensitivity and specificity of the test.

Results: The intra-class correlation for test–retest reliability of the total VRPMT–CV score was .78 ($p = .005$). There was a significant correlation between total VRPMT–CV score and the total CAMPROMPT–CV score ($r = .90$, $p < .001$). Comparison with healthy controls revealed that total VRPMT–CV score was a sensitive (92.9%) and specific (75%) measure of PM deficits in individuals with schizophrenia.

Conclusion: VRPMT–CV is a PM assessment with good construct validity, test–retest reliability, sensitivity and specificity in the context of schizophrenia. Further study in developing norms for schizophrenia and other psychiatric groups such as bipolar disorders and depression is recommended.

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Concurrent Session 8

Identifying Social Cognitive Profiles in ABI: Evidence for Distinct Emotion Processing Subgroups

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Background and aims: Deficits in social cognition are now well documented in a subset of individuals with acquired brain injury (ABI). However, there is significant heterogeneity in the nature and severity of these deficits, and a typology of social cognitive profiles after ABI is yet to be well characterised. The aim of this study was to identify distinct profiles in the ability to perceive, understand and regulate emotions amongst individuals with ABI, and to evaluate clinical and functional correlates of these subgroups.

Method: Eighty adult participants with moderate to severe ABI were recruited from two specialist rehabilitation centres in Melbourne. Average time since ABI was 18 months. Participants completed the Mayer–Salovey–Caruso Emotional Intelligence Test v2.0, Community Integration Questionnaire, Hospital Anxiety and Depression Scale, the Brief COPE and Wechsler Adult Intelligence Scale subtests. Clinical information was collated from medical records.

Results: A hierarchical cluster analysis revealed three subgroups characterised by distinct emotion processing profiles: (1) intact emotional skills; (2) global impairment in emotional skills, (3) focal deficit in strategic skills (understanding and regulating emotions), with preserved emotion perception. These groups varied in their cognitive functioning, clinical features and functional outcomes.

Conclusions: These findings suggest that distinctive social cognitive profiles exist in ABI, characterised by differing strengths and weaknesses in emotion processing skills. These subgroups appear to be important for understanding differences in social and community functioning after ABI, and thus are

likely to be of particular relevance to treatment planning in rehabilitation settings.

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Communication: It's All About Networks: The Role of the Corpus Callosum in Social Cognition

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B **ackground:** Severe traumatic brain injury (TBI) leads to significant difficulties in social communication. Social communication relies upon a network of cerebral systems supporting language and social cognition. Severe TBI is characterised by diffuse axonal injury affecting white matter tracts throughout the brain. The corpus callosum (CC) connecting the two hemispheres is implicated in social communication and often damaged following TBI. The present study examined the relationship between damage to the CC and performance on The Awareness of Social Inference Test (TASIT) in TBI. **Method:** Seventeen adults (mean age 45.6) with mod-severe TBI (Mean PTA = 49.9) and 17 matched controls (mean age 44.3) were administered TASIT and underwent cerebral MRI scans. Diffusion Tensor Imaging was used to obtain fractional anisotropy (FA) values from the genu, body and splenium of the CC as an index of white matter integrity.

Results: The TBI group performed more poorly than controls on TASIT. They also demonstrated low FA values (loss of integrity) in all three regions of the CC. Lower FA values on the CC independently predicted poor TASIT scores (all three parts) whereas total damage to select grey matter structures in the left and right hemisphere did not.

Conclusions: Overall, TBI participants had lower white matter integrity within the CC, indexed by FA, as well as deficits in social cognition. Emotion evaluation and social inference were both highly related to white matter quality in the CC.

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Assuming the Driver Role: A Mixed Methods Study Examining Family Members' Experiences of Driving Disruption After Acquired Brain Injury

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B **ackground and aims:** Family members often assume the driver role for individuals who are experiencing driving disruption following an acquired brain injury (ABI). Literature has demonstrated the consequences of taking on the driver role in other population groups, but little is known about how it affects family members of individuals with ABI. Therefore, this study aims to (1) explore family members' lived experiences of driving disruption at early and later stages of the recovery continuum following ABI and (2) describe family members' health-related quality of life.

Method: A mixed methods phenomenological research approach was used. Semi-structured interviews and health-related quality of life questionnaires

were conducted with 15 family members of individuals with ABI (early group: 1–12 months post injury, $n = 6$; later group: >1 year post injury, $n = 9$).

Results: Two main themes were identified: Different for everyone: how driving disruption affects families, and Making it harder: context of driving disruption. The challenges of driving disruption were reported more frequently and with a more intense focus by family members who were caring for their relative more than 1-year post injury. This group also reported higher caregiver strain and poorer health-related quality of life. Reduced satisfaction with life, poor mental health and affected family functioning was reported by both groups.

Conclusions: Driving disruption is a distinct domain of care giving that affects family members. The challenges of driving disruption do not resolve over time and has long-lasting consequences. It is important for clinicians to work with family members to manage these challenges even years after ABI.

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Social and Environmental Impact of Primary Brain Tumour: A Qualitative Meta-Synthesis

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Background and aims: People with strong social ties are better protected from the adverse effects of stressful events than those who are socially isolated. Social group memberships can buffer against the ill-effects of chronic illness on psychological health. People with brain tumour report high levels of distress and social losses; however, there is little research on how brain tumour impacts on social networks over time. This qualitative meta-synthesis aimed to formally synthesise social and environmental themes across existing qualitative studies.

Methods: Searches of four major databases (PubMed, CINAHL, Cochrane Library and PsycINFO) were conducted in January 2016 based on a predetermined search strategy. Eligible published studies were selected and appraised using the Critical Appraisal Skills Programme checklist by two authors. Key themes were identified and summarised from each study. Key themes across studies were synthesised into new concepts and overarching themes.

Results: From 24 studies, eight themes were identified to describe the enduring social experiences of people with brain tumour: (1) social trajectory; (2) role changes; (3) close relationships; (4) extended family, friends and colleagues; (5) barriers to social connection; (6) support needs; (7) interactions with the healthcare system; (8) support groups. These will be presented in-depth along with supporting participants' statements.

Conclusions: Formal and informal social networks are considered helpful and valued for many people with brain tumour. Social losses and barriers to remaining connected are commonly reported in the qualitative literature on living with brain tumour. The implications for research and psychosocial interventions will be discussed.

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Concurrent Session 9

'He Went Back Into his Shell Like a Tortoise'. Exploring the Challenging Journey of Stroke SurvivalJacinta Douglas^{1,2}¹ College of Science, Health and Engineering, La Trobe University, Melbourne, Australia² Summer Foundation, Melbourne, Australia

Background and aims: Stroke has been described as a double crisis because survivors and families are faced with both the need to adapt to the physical, cognitive and emotional consequences of the stroke and the need to negotiate a foreign culture, the healthcare system. The aim of this study was to gain some understanding of how stroke survivors and their family carers have experienced the stroke care continuum.

Method: Fourteen stroke survivors (six men, eight women) and 14 family care givers (six wives, five husbands, three daughters) participated. Survivors were between 34 and 85 years old and between .5 and 11 years post stroke. In-depth interviews were conducted with the 14 dyads to explore the stroke care experience with a particular focus on personal responses, feelings and needs. Qualitative analysis of interview transcripts used a constructivist grounded theory approach and moved through a process of data-driven open and focused coding to reveal emergent themes and categories.

Results: The care experience emerged as a process comprising a series of phases that could both overlap and re-occur. Survivors and care givers described positive responses to care provision as well as negative responses to unmet needs. Needs identified within the participants' experiences showed links to practice strategies described in the literature and included in stroke guidelines.

Conclusions: Needs of stroke survivors and family care givers are inextricably linked during stroke recovery. Despite the introduction of practice guidelines, responsiveness and sensitivity to personal need are qualities that continue to be seen as lacking in the care experience.

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Where to Next-Developing Resources to Assist People Living with HIV Associated Neurocognitive Disorder (HAND)David Crawford,¹ Denise Cummins,^{2,3} Donna Waters,² Christina Aggar,² and Catherine C. O'Connor⁴⁻⁶¹ Positive Life, NSW, Australia² Sydney Nursing School, University of Sydney, NSW, Australia³ Sydney District Nursing, Community Health, Sydney Local health District, NSW, Australia⁴ Sexual Health Service, Community Health, Sydney Local Health District, NSW, Australia⁵ The Kirby Institute, University of NSW, Australia⁶ Central Clinical School, University of Sydney, NSW, Australia

Background: HAND is characterised by cognitive, motor and behavioural abnormalities. From 15% to 60% of people living with HIV (PLWH) are at risk of developing HAND on effective HIV anti-retroviral treatments. This can impact on medication adherence, linkage and access to treatment and care leading to poor health.

Objectives: To ascertain the experiences of PLWH, knowledge and concerns regarding HAND; exploring whether PLWH consider HAND resources beneficial.

Method: A Survey Monkey questionnaire distributed via Positive Life NSW a non-government organisation (NGO) representing PLWH, over 4 weeks in August/September 2015.

Results: 75% of PLWH who had knowledge of HAND, 52% were concerned about HAND, 49% felt anxious about talking to someone about HAND and 15% would not discuss their concern. 2% of those who had experienced a dismissive response said they would never speak to anyone again. 42% of PLWH have experienced signs and symptoms of HAND. Those living longer with HIV experienced difficulty in organisational tasks ($p = .012$) and 24% of PLWH had noticed cognitive changes in friends but only 39% would be able to talk to them about this. 50% of PLWH wanted strategies to improve discussion with their doctors and families, additionally carers wanted strategies of how to broach the subject with the PLWH.

Conclusion: PLWH are concerned about HAND. Resources and tools need to be developed to assist in the conversations between PLWH, healthcare professionals and carers.

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The Five Most Frequently Reported Visual Deficits following Traumatic Brain Injury

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Background and objectives: The visual system spans a large area of the cortex and is thus readily affected, and more so at particular sites, following a traumatic insult. The aim of this presentation is to describe the five most frequently occurring deficits identified following a systematic search of the literature.

Method: A systemic search using Medline, EMBASE, CINAHL from 2003 January 1 to 2015 December 31 was undertaken. The search was restricted to adult (≥ 18 years) non-blast-related TBI cases of any severity in which vision and ocular deficits were identified.

Results: Of the 61 studies reviewed, 30 visual deficits were found. The five most frequently reported deficits were: reduced vision (total number of cases; $n = 165$), visual field defects ($n = 140$), pupillary anomalies ($n = 129$), diplopia ($n = 115$) and saccadic dysfunction ($n = 109$). Vision reduction was most frequently reported at distance (approx. 6 m) vs. near vision.

Visual field deficits included bitemporal or homonymous hemianopia and sectoranopia. Afferent pupillary defects were recorded, as well as pathological anisocoria (unequal pupil size) which could have been the result of traumatic mydriasis. Horizontal, vertical and torsional diplopia was associated with other entities, including cranial nerve palsy (CN III, CN IV, CN VI), orbital fracture and absent fusion. Saccadic anomalies included delayed reaction times, reduced accuracy and increased error in planning. People with a TBI can experience such visual defects in isolation or combination.

Conclusions: These outcomes are a useful guide for clinicians to consider when undertaking visual assessment of patients with TBI.

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Exploring the Role of Social Cognition and Discourse Comprehension in Cognitive-communication Disorder After Right Hemisphere Stroke

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Background and Objectives: Cognitive-communication disorder (CDD) after right hemisphere stroke impacts on an individual's ability to communicate fully with others. Previous research into cognitive constructs such as theory of mind, executive function and central coherence has failed to fully explain the observed communication deficits. Despite deceptively normal linguistic skills this group presents with specific lexical-semantic and discourse deficits that in combination with cognitive deficits that may explain the communication changes. The study objective was to explore how social cognitive and discourse comprehension deficits may contribute to CCD after right hemisphere stroke.

Methods: Ten individuals with right hemisphere stroke (mean age = 64 ± 8.7years) were recruited to the study between 1–3 three months post stroke. Participants completed The Awareness of Social Inferencing Test, emotional prosody task from the Montreal Evaluation of Communication and Discourse Comprehension Test. Comparison of individual performance to normative values was used to identify areas of deficit, with descriptive analyses used to explore patterns of deficit.

Results: All 10 participants were diagnosed with CCD; the majority ($n = 8$) presenting with mild or mild-moderate CCD. Deficits in social cognition (emotion perception and theory of mind) were identified in all 10 participants, although the nature of the deficits was variable. Discourse comprehension was impaired in 7 of 10 participants. No clear interaction between discourse comprehension and social cognitive abilities was evident.

Conclusions: Social cognition and discourse comprehension deficits contribute to the development of CCD after right hemisphere; however, further investigation of their contribution to changes an individual's communication profile is required.

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Plenary 4

The Use of 'Occupation' to Enhance Self-Awareness and Performance in Brain Injury Rehabilitation

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Background and aims: The use of occupation as a therapeutic modality in brain injury rehabilitation is a growing area of research with recent studies demonstrating its value in improving self-awareness and functional performance. The term 'occupation' refers to meaningful and purposeful activities that people engage in as a part of daily life. This presentation aims to provide an overview of research evidence evaluating the use of meaningful occupation in brain injury rehabilitation.

Method: A series of studies will be presented using various designs including meta-analysis, randomised controlled trial and single case experimental designs.

Results: The findings taken as a whole provide an emerging body of evidence that engagement in meaningful occupation within the context of a therapy programme facilitates the development of self-awareness in people with traumatic brain injury, and more importantly, leads to goal attainment and improved occupational performance.

Conclusions: Key elements of the effective use of occupation as therapy in brain injury rehabilitation include the therapeutic relationship, client-centred goal setting, timely feedback and a metacognitive skills training approach.

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Cognitive-Neuropsychological Testing Across Languages

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Assessment of cognitive deficits caused by stroke is vital for planning rehabilitation. However, a longstanding issue in neuropsychology is how to assess cognitive impairment when language is impaired (aphasia). The Oxford Cognitive Screen (OCS) is a neuropsychological assessment tool designed by the late Professor Glyn Humphreys and colleagues to detect cognitive deficits amongst stroke survivors and has been validated in several languages including Cantonese and Mandarin. In this presentation, I will outline the epistemology behind the OCS, which is grounded in cognitive neuropsychology. Delegates will recall the outstanding contribution of Professor Humphreys to the origins of cognitive neuropsychological assessment and a Keynote and workshop presented at the ASSBI meeting in Canberra over 20 years ago. I will argue that a language neutral assessment battery is preferable for a comprehensive assessment of cognitive impairments in stroke and illustrate the importance of such an approach for assessment within and between languages including the neuropsychological testing of multilingual speakers who are the majority of cases in Hong Kong and surrounds. Current work focused on the app and tablet version of the OCS for administration to seniors with progressive neurological illness will also be described. I will provide evidence to show that the OCS is a reliable and valid cognitive screen for Hong Kong seniors and ready for clinical use in Hong Kong and Mainland China.

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Concurrent Session 10

Development and Validation of the Strategy Use Measure (SUM): Evaluating the use of Cognitive, Behavioural and Emotional Strategies After an Acquired Brain Injury

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B **ackground and aims:** After acquired brain injury (ABI), individuals may experience changes to their cognition, behaviour and emotions. Strategies are often employed to compensate and manage these changes. The aim of this paper was to develop and validate a measure which assesses strategy use after ABI across these three domains.

Method: Item content of the SUM was developed using four methodological components including expert committee formation, consumer focus groups, a file review and a consensus meeting. A total of 86 participants with an ABI completed the 17 item SUM and a demographic questionnaire. A smaller subset ($n = 38$) completed validation measures to measure aspects of compensatory behaviours and another subset ($n = 29$) repeated the measure for test–retest reliability on average 8.8 days later.

Results: Exploratory Factor Analysis indicated a four factor structure, but the fourth factor had only two items and was excluded. The three factor solution, with 14 items scored on a five-point Likert scale (range 0–4), demonstrated good reliability on each subscale (Cronbach’s alpha .82–.83). The three subscales were Memory and Planning (MP, five items), Emotion/ Mood (EM, five items) and Cognitive Load (CL, four items). Good convergent validity occurred between memory subscales and the MP and CL subscales ($r_s = .50–.85$) and sound test–retest reliability (ICC = .77–.82).

Conclusions: Initial validation of the SUM is promising for cognitive subscales with further validation recommended for the EM subscale with measures of distress. The SUM has potential to be an invaluable tool in planning and evaluating treatment post-ABI.

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The SCRIBE 2016: A Reporting Guideline for Single-Case Experimental Designs

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Background: Reporting guidelines have helped to improve how research is reported in the literature, and guidelines for reporting between-group studies (e.g., the CONSORT Statement and its Extension to Nonpharmacological Trials) have been available for some time. More recently, guidelines for reporting single-case designs in medical research (CENT) have been published, but no guidelines for reporting single-case research in the behavioural sciences have been available. We developed the SCRIBE 2015 (Single-Case Reporting guideline In BEhavioural interventions) to meet this need.

Method: Two rounds of a Delphi survey were conducted to evaluate a pool of potential items considered to be important for the clear and rigorous reporting of the conduct and results of investigations using single-case experimental designs methods. A subsequent consensus meeting of 21 experts in the field was held to finalise the items to be included in the SCRIBE checklist.

Results: There were 44 items considered in the Delphi exercises. The consensus meeting resulted in the final 26 items that constitute the SCRIBE 2016 checklist. Items cover six sections: Title and abstract (two items), Introduction (two items), Method (14 items), Results (three items), Discussion (three items) and Documentation (two items). A rationale for the relevance of each item in the checklist was developed and examples of adequate reporting were harvested from the literature.

Conclusion: The SCRIBE will help authors to report single-case research with clarity, completeness, accuracy and transparency. The checklist will also facilitate critical evaluation of reports by journal editors and reviewers, as well as consumers of the literature.

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Evaluation of the Client-Centredness of Goal Planning in Outpatient Brain Injury Rehabilitation Settings

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Background and objectives: Motivation for rehabilitation increases when clients see the link between goals and therapy. This study aimed to determine (1) client-centredness of multi-disciplinary goal planning in outpatient brain injury rehabilitation, (2) whether non-jargonistic goals and ICF

activity/participation goals were perceived as more important to the client, (3) whether there is a relationship between perceived client-centredness of goals and goal achievement.

Method: The Client-centredness of Goal Setting Scale (C-COGS) and Canadian Occupational Performance Measure (COPM) importance scale were administered to clients after goal setting with therapists. Goal statements were categorised according to characteristics including presence of jargon, ICF level targeted, inclusion of client's name, timeframe and goal specificity and measurability. The goals were sorted into high and low importance groups using the client's COPM importance rating. Change in goal-related performance and satisfaction for the groups was compared using Mann–Whitney U Tests and goal characteristics compared using Chi-Square analysis.

Results: Participants were 44 clients with acquired brain injury attending a public outpatient day hospital or private community-based brain injury rehabilitation. Two hundred twenty three goals were set with 19 therapists. C-COGS ratings indicated that clients perceived their goals and the goal planning process as highly client-centred. There were no significant differences in the characteristics of the goal statements between the high and low importance groups. Outcomes on highly important goals were significantly better than goals of lesser importance.

Conclusion: Goal planning should elicit goals of importance to the client. The C-COGS can be used to evaluate and enhance client-centred goal setting.

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Training Clinicians in Adapted Cognitive Behavioural Therapy (CBT) for Depression and Anxiety After Acquired Brain Injury (ABI): How do Workshop Participation and Supervision Affect Clinician Competence?

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Background and Aims: Depression and anxiety following ABI can be effectively treated using CBT adapted to compensate for cognitive difficulties (Ponsford et al., 2016). Training clinicians to deliver adapted CBT is vital for effective translation; however, research evaluating effective training methods is lacking. We evaluated benefits of workshop participation and clinical supervision on competencies in delivering adapted CBT.

Method: Participants were 39 psychologists who either attended a workshop focused on skill development in adapted CBT to treat anxiety and depression after ABI ($n = 25$), or the same workshop augmented with 3 hours of specialist supervision focusing on audio recordings of participants' adapted CBT sessions ($n = 14$). Participants self-rated their competencies in adapted CBT pre-and post-workshop, and again after supervision. Observer ratings of CBT competence were completed using the Cognitive Therapy Rating Scale (CTRS) at the first and third supervision session. Interviews were conducted to explore supervisors' experience of supervision.

Results: Example adaptations and videos of adapted CBT were rated the most useful workshop elements. Participants' self-rated competencies in adapted CBT showed significant increases post-workshop, but did not further increase following supervision. However, CTRS scores did show significant improvement as a result of supervision. Supervisor feedback indicated that supervision

was important for skill development in case formulation, agenda setting and incorporating homework.

Conclusions: These findings provide preliminary evidence that psychologists can develop competence in adapted CBT using a combination of interactive training methods. This research could be extended by examining the effect of improvements in clinician competence on client outcomes following adapted CBT.

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Concurrent Session 11

An Inpatient Occupational Therapy Group Programme in Brain Injury Rehabilitation: Overview of Principles, Processes and Evaluation

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B **ackground and aims:** Therapy groups are commonly used in brain injury rehabilitation as a cost-effective method of service delivery; however, patient perceptions are largely uninvestigated. This paper aims to describe the structure and processes of an occupational therapy groups programme at an inpatient brain injury rehabilitation unit, and to evaluate it from the perspective of patients.

Method: Participants were 35 inpatients (30 males, 5 females) with traumatic brain injury who participated in meal preparation, community access, cognitive and upper limb groups. Data were collected using a customised self-report questionnaire on patient perceptions of different aspects of the groups. Data were analysed descriptively and comparison made between groups with a functional focus and groups with an impairment focus using *Z* scores.

Results: Participants completed a total of 83 questionnaires. Across all groups, 92.8% of participants strongly agreed/agreed that *the group was useful*. There were no significant differences in perceptions about the groups between the functional groups and the impairment groups. Participants responded positively regarding the value of interacting with peers, the individualised nature of treatment within groups, and feedback they received in the groups. An illustrative case example of the process and outcomes of the group programme will be presented.

Conclusions: Patients reported positive experiences of the groups programme, which follows key principles including individualised goals, facilitation of peer support and learning and structured processes for patient selection, planning and facilitation of groups. Further in-depth investigation of patient perceptions of groups including processes that facilitate or challenge group participation is warranted.

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Getting Back to 'the Day to Day Business of Uni' – Students' Perspectives on how to Support Return to Education Following Brain Injury

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Background and Aims: Supporting students to resume participation in their studies following traumatic brain injury (TBI) is an important goal for rehabilitation. As a result, much work has been done by clinicians and educators to develop processes for helping students with TBI to successfully transition into education. However, significant difficulties remain in supporting students successfully, perhaps signalling the need to look beyond the focus on academic support and explore broader issues identified by students themselves. This paper aims to (i) draw on students' perspectives of factors that affect their educational experience beyond academic performance alone; (ii) provide a clinical framework based on this research evidence to guide practice; (iii) explore strategies that may be used for promoting positive educational participation.

Method: The authors completed a secondary analysis of data drawn from a qualitative research project in which three adolescent males were interviewed about their experiences of returning to education after sustaining severe TBI.

Results: Six issues were identified that had a substantial impact beyond academic performance: 'poor community awareness of TBI', 'the invisible nature of TBI', 'getting back to everyday life', 'planning to return to education', 'being accepted' and 'adjusting to long-term changes'. Incorporating these factors, a clinical framework based on key areas: 'student self-concept'; 'changes- personal and environmental' and 'social supports', is put forward as a guide for exploring support strategies.

Conclusions: By considering factors beyond academic performance and addressing these in intervention, rehabilitation programmes may significantly improve the overall educational success and wellbeing of students living with TBI.

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The Influence of Cultural Factors on Outcome following Traumatic Brain Injury

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Background and aims: Most traumatic brain injury (TBI) outcome studies focus on white, English speaking patients who identify with the dominant healthcare system. Little is known of the experience of TBI individuals from Culturally and Linguistically Diverse (CALD) backgrounds. The present study compared outcomes following TBI in individuals from English-Speaking Backgrounds (ESB) with those from CALD backgrounds.

Method: 104 ESB and 99 CALD participants with TBI were assessed an average 22.3 months post injury on the Brief Acculturation Scale, Craig Handicap Assessment and Reporting Technique (CHART), Activities of Daily Living scale, Coping Scale for Adults and Hospital Anxiety and Depression Scale.

Results: Results showed no significant group differences in most demographic and injury-related variables, although CALD participants showed lower pre-injury employment. There was no significant difference between groups in therapy costs. At post-injury follow-up, CALD participants were significantly less independent than the ESB group in light domestic duties, shopping and financial management, and reported lower cognitive independence, mobility and participation in occupational and social activities on the CHART after controlling for pre-injury employment. CALD participants reported heightened awareness of post-injury deficits relative to ESB participants, and held different beliefs regarding injury consequences and factors that would aid their recovery. The CALD group also reported greater anxiety symptoms and less problem-focused coping than the ESB group.

Conclusions: Poorer outcomes in CALD individuals with TBI are not simply reflective of socio-demographic factors. TBI clinicians need to consider their differing beliefs about injury and recovery in order to maximise outcomes in CALD individuals.

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POSTERS

Understanding How Negative Life Events is Associated with Suicidal Risk in College Students: Examining Self-compassion as a Potential Mediator

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Background and aims: One variable frequently associated with suicidal risk in college students is experience of negative life events. Importantly, self-compassion has also been found to be negatively associated with negative psychological outcomes, including depressive symptoms. Thus, we tested a hypothesised model consistent with the notion that self-compassion mediates the association between negative life events and suicidal risk (viz., depressive symptoms and suicidal behaviours) in college students.

Method: The sample was comprised of 333 college students. Self-compassion facets (viz., self-kindness, self-judgment, common humanity, isolation, mindfulness and over-identification) were used in testing for multiple mediation, controlling for sex.

Results: Common humanity, mindfulness and over-identification were found to mediate the association between negative life events and depressive symptoms. However, common humanity was found to be the only mediator of the association between negative life events and suicidal behaviours.

Conclusions: These findings suggest that there are specific facets of self-compassion that account for the association between negative life events and suicidal risk in college students and that (loss of) common humanity plays a central role in this process.

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Do People with Cognitive-Communication Disorder After Stroke have the Same Rehabilitation Needs and Outcomes as People with Aphasia?

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B **ackground and Objectives:** Little is known about how the presence of cognitive-communication disorder (CDD) after stroke influences rehabilitation outcomes. For people with aphasia (PwA), however, it is known that they require longer inpatient stays and make smaller functional gains than stroke survivors in general. The study objective was to determine if CCD has a similar impact on rehabilitation utilisation and outcomes when compared to PwA.

Methods: A retrospective chart audit of patients with first onset unilateral stroke without concomitant psychiatric or dementia diagnoses was undertaken. Data extracted was guided by defined socio-demographic and clinical factors, including presence and severity of communication impairment, access to inpatient rehabilitation, hospital length of stay (LOS) and functional outcomes.

Results: Inclusion criteria was met by 125 of 392 consecutive admissions (average age = 71.9 ± 13.7 years). Inpatient rehabilitation was provided to 57.6% of patients and 64% had a documented communication impairment (PwA = 42; CCD = 38). No significant between group differences were found for rehabilitation access ($p = .32$) and hospital LOS ($p = .52$). A trend ($p = .59$) towards people with CCD making smaller functional gains based on Functional Independence Measures (FIM) than PwA was observed with FIM gain of 20.3 and 29.5, respectively.

Conclusions: Access to rehabilitation services, hospital LOS and functional gains made during rehabilitation for people with CCD was similar to that of PwA. CCD, alongside aphasia should be acknowledged as impacting response to rehabilitation with consideration given to how we maximise rehabilitation outcomes for people with communication disorder. A better understanding of how CDD affects participation in rehabilitation is still required.

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Preliminary Reliability and Validity of the Home-Based Cooking Task for Assessment of Error Behaviour in the Home Following Severe Traumatic Brain Injury

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B **ackground and Objectives:** The importance of ecologically valid assessment has led to research investigating the ecological validity of existing measures as well as the development of new measures to more closely reflect

peoples' capacities in the real world. This study examined inter-rater reliability and sensitivity of a home-based version of the Cooking Task (HBCT) and investigated cognitive processes relating to performance on the HBCT for people with severe traumatic brain injury (TBI).

Method: Participants included 45 adults (9 females, 36 males) with severe TBI aged 18–64 years ($M = 37.91$, $SD = 13.43$) living in the community. They were administered the HBCT in their home kitchens and a battery of neuropsychological tests. Inter-rater reliability and sensitivity of the HBCT were examined in a subgroup of 14 TBI participants, with control participants matched on age, gender and cooking experience.

Results: Inter-rater reliability of the HBCT ranged from good to excellent for continuous error indices (ICCs = .63–.96), and fair to excellent for dichotomous error indices ($k = .57$ –.86). TBI participants made significantly more errors than controls for each error type and were less likely to complete the task ($p < .05$); however, there were no significant group differences for dangerous behaviour. After controlling for prior cooking experience, greater Omissions and Estimation errors, lack of goal achievement and longer completion time were all associated with poorer attention, memory and executive functioning.

Conclusion: Overall, the findings support the utility of the HBCT as an ecological assessment of error behaviour in the home.

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A Comparison of Online Awareness and Error Behaviour between two Individuals with Traumatic Brain Injury and Matched Controls During Occupational Performance

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Background and Objectives: Online awareness and error behaviour has largely been studied using computer-based tests or prescribed functional tasks in participants with traumatic brain injury (TBI). This study aimed to compare online awareness and error behaviour of two participants with TBI with two matched controls during tasks of meaning and importance to the participants with TBI, using an occupation-based online awareness assessment.

Method: Participants were two males with TBI (aged 22 and 23) and two controls (aged 23 and 27). Personally meaningful occupations were identified by the participants with TBI who then performed each task on two consecutive occasions. Performances were video-recorded and assessed by two occupational therapists to measure the frequency of errors, the percentage of errors that were self-corrected and the types of error behaviours observed.

Results: The participants with TBI demonstrated more frequent errors and poorer self-correction of errors compared to controls. Control participants made greater improvements in error frequency and self-correction with practice, and demonstrated a narrower range of error behaviours.

Conclusion: This study builds upon previous research to compare the online awareness and error behaviour of participants with TBI and matched controls, using the occupation-based online awareness assessment during performance of meaningful occupations.

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SPIN90 Regulates Synaptic Structure and Affects Plasticity and Learning

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Long-term potentiation (LTP) and long-term depression (LTD) are known to strengthen or weaken synapses, respectively. However, the precise mechanism by which they are fine-tuned remain to be clarified. Here, we address a possible role of actin-binding protein, SPIN90, in synaptic plasticity *in vivo* using knockout (KO) mice tissue. Structural analysis using immunohistochemistry revealed correct subcellular sorting of neurons in the CA1 and dentate gyrus region of the hippocampus, but showed structural disorganisation in the CA3 stratum radiatum in SPIN90 KO tissue compared to wildtype (WT). In SPIN90 KO Schaffer collateral-CA1 synapses, NMDAR-LTP induced by theta-burst stimulation (TBS) was comparable to WT levels. However, the induction of NMDAR-LTD by low-frequency stimulation (LFS) was significantly impaired in SPIN90 KO mice, suggesting dysfunction in synaptic activity with SPIN90 depletion. Interestingly, pS845-GluA1 dephosphorylation, a pre-requisite process for AMPAR endocytosis, was blocked upon cLTD induction in SPIN90 KO cultured hippocampal neurons. Furthermore, cLTD induced AMPAR endocytosis was also significantly attenuated in SPIN90 depleted neurons compared with WT. To test behavioral modification, we performed a series of hippocampus-dependent behavioral tasks. During the context-dependent fear conditioning, the freezing behavior of SPIN90 KO mice was comparable to that of WT mice, demonstrating normal associative memory formation. However, SPIN90 KO mice showed significantly higher levels of freezing behaviour on subsequent trials of re-exposure, indicative of impaired memory extinction. Taken together, these data indicate that SPIN90 is necessary for NMDAR-dependent LTD at hippocampal synapses and may play a role in the refinement of spatial memory and associative learning.

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Plasma miR-16-5p is a Potential Biomarker of Alzheimer's Disease and Upregulated in Thalamus of 5xFAD Mouse Model

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Alzheimer's disease (AD) is the most common form of dementia in elderly population. Because of its irreversible nature, accurate pre-diagnosis of AD is crucial to delay disease progression. Recently, circulating miRNAs have emerged as novel biomarker candidates for early diagnosis of various diseases. Here, we selected circulating miRNAs as potential biomarker of AD and investigated its function related with AD-like progression. First, we analysed the level of miRNAs in plasma of WT and 5xFAD mice in various age by Microarray analysis. Eighty-six miRNAs were statistically selected as significantly changing miRNAs according to AD-like pathogenesis in 5xFAD mice compared to WT. In hierarchical clustering, a cluster of miRNAs showed the most aberrant changes in plasma of 5xFAD mice and these changes of four miRNAs in this cluster was verified by qPCR. Next, we analysed the

expression level of miR-16-5p, which showed the highest level in plasma amongst them, in various regions of the brain of 5xFAD mice. As a result, miR-16-5p was significantly upregulated in thalamus of 5xFAD mice compared to age-matched WT mouse. Because miR-16-5p have been known to inhibit APP and BACE1 expression, these results imply the protective role of miR-16-5p by upregulation in thalamus in which amyloid plaques are highly deposited. Most importantly, the level of miR-16-5p was significantly higher in the plasma of mild cognitive impairment (MCI) and AD patients than in the plasma of healthy participants. Collectively, our data suggest that miR-16-5p could be a non-invasive biomarker of AD and essential role in thalamus.

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The Effect of Implementation Intention on Different Categories of Prospective Memory Performance in Patients with Schizophrenia

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B **background:** Prospective memory (PM) refers to remembering to execute a planned intention in the future, which includes event-based PM (focal, non-focal) and time-based PM according to the nature of cues. Focal event-based PM, where ongoing task requires processing of PM cues, has been found to be benefited from implementation intention (i.e., an encoding strategy in the format of ‘if I see X, then I will do Y’). However, it is unclear about the effect of implementation intention on non-focal event-based PM (where ongoing task is irrelevant with PM cues) and time-based PM. The study investigated whether and how implementation intention can improve non-focal event-based PM and time-based PM performance in patients with schizophrenia.

Method: Thirty-eight patients with schizophrenia were administered both computerised non-focal event-based PM task and time-based PM task. Patients were randomly allocated to either implementation intention condition ($N = 20$) and typical instruction condition ($N = 18$).

Results: The implementation intention group showed higher PM accuracy than typical instruction group in both non-focal event-based PM task ($.49 \pm .32$ vs. $.19 \pm .31$, $t(36) = 2.90$, $p = .006$) and time-based PM task ($.71 \pm .32$ vs. $.42 \pm .42$, $t(36) = 2.43$, $p = .022$). And the ongoing performance in both two PM tasks and clock checking frequency in time-based PM showed no significant difference between the two groups.

Conclusion: Implementation intention is an effective strategy for improving different categories of PM performance in patients with schizophrenia, and it seems to work in an automatic way.

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Performance of Healthy Older Adults on Frontal-lobe Memory Tests

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B **background and aims:** Research has shown that memory is impaired in healthy older adults compared to healthy younger adults. This

age-related impairment is seen as the product of normal aging rather than the result of pathology (Hedden & Gabrieli, 2004). The study explored the relationship between normal aging and frontal-lobe memory tests.

Method: Twenty older healthy individuals (5 males, 15 females; M age = 77.20 years, $SD = 6.00$) were matched in terms of education and premorbid IQ to 21 younger individuals (2 males, 19 females; M age = 49.24 years, $SD = 8.34$). The older group, according to scores on the mini-mental state examination (MMSE), were in the normal range of cognitive functioning and not showing signs of dementia.

Results: Results of t -test analyses found significant differences between the two groups on recall, recognition, organisation, susceptibility to interference, source memory, meta-memory, working memory and prospective memory, with older participants performing more poorly than the younger group.

Conclusion: The conclusion drawn from the study is that age-related memory impairment is found on frontal-lobe memory tasks.

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